

Vol. IX  
TRANSCRIPT OF RECORD

(Pages 4057 to 4429)

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Supreme Court of the United States

OCTOBER TERM, 1944

No. 296

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PANHANDLE EASTERN PIPE LINE COMPANY,  
ILLINOIS NATURAL GAS COMPANY AND MICHIGAN  
GAS TRANSMISSION CORPORATION, PETITIONERS.

vs.

FEDERAL POWER COMMISSION, CITY OF DETROIT,  
COUNTY OF WAYNE, MICHIGAN, ET AL.

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ON WRIT OF CERTIORARI TO THE UNITED STATES CIRCUIT COURT  
OF APPEALS FOR THE EIGHTH CIRCUIT

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PETITION FOR CERTIORARI FILED JULY 28, 1944.

CERTIORARI GRANTED JANUARY 3, 1945.

**VOL. IX.**  
**TRANSCRIPT OF RECORD.**

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**United States Circuit Court of Appeals**  
**EIGHTH CIRCUIT.**

**No. 12,466**

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**PANHANDLE EASTERN PIPE LINE COMPANY, A  
CORPORATION, ILLINOIS NATURAL GAS  
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**PETITION TO REVIEW AND SET ASIDE ORDER OF FEDERAL  
POWER COMMISSION.**

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**FILED FEBRUARY 6, 1943.**



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**PETITION TO REVIEW AND SET ASIDE ORDER OF FEDERAL  
POWER COMMISSION.**

**FILED FEBRUARY 6, 1943.**

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The decree permits Columbia Oil, on application, to be exempted from the terms of the decree when Columbia Gas has divested itself of control of Panhandle Eastern by divesting itself of voting securities of Columbia Oil.

Pursuant to the decree Gano Dunn was appointed trustee to hold all securities of Panhandle Eastern with present or potential voting rights owned, or to be acquired by Columbia Oil. The decree defines the trustee's powers as follows:

1. He may vote the stock for the election of directors of Panhandle Eastern—one of which shall be himself.

2. The directors elected by the trustee are to be recommended by Columbia Oil, which may not, however, without approval of the court and the trustee recommend any of the defendants in the action or any of the officers, directors, employees or agents of Columbia Gas.

3. The trustee is permitted to remove and replace directors, if necessary for the purposes of the decree, subject to control of the court.

4. The trustee is to vote Panhandle Eastern's stock as directed by the beneficial owners except when such directions are inconsistent with the purposes of this decree.<sup>13</sup>

The decree provides for termination of the trust upon the following conditions:

1. That Columbia Gas divest itself of control over Panhandle Eastern by divestiture of ownership of the voting securities of Columbia Oil, or

[(fol. 10817)] 2. That Columbia Oil divest itself of all of its stock in Panhandle Eastern, or

3. That the trust is no longer essential to carry out the terms of the decree.

<sup>13</sup>In addition the trustee is required to pay to Columbia Oil all dividends except stock dividends, which are subject to the terms of the decree; and he must exercise all rights to subscribe to any securities as Columbia Oil may direct. Specific power to approve any underwriting necessary to finance Panhandle Eastern's performance of its contract



### C. Effect of the Decree on the Relationship Between Columbia Gas and Columbia Oil

We do not think that the changes required by the decree<sup>14</sup> have the effect of freeing Columbia Oil from the control or controlling influence of Columbia Gas within the meaning of Section 2 (a) (8) of the Act. We do not mean to intimate any opinion as to whether the decree has or has not had the effect of enforcing compliance with the anti-trust laws; that question is not in issue before us. We need only determine the status of the applicants under Section 2 (a) (8).

First, it is doubtful whether we could, in any case, hold that an applicant for a declaratory order under Section 2 (a) (8) has satisfied its burden of demonstrating the absence of controlling influence by showing merely that the owner of 10% or more of the outstanding voting securities has only a minority on its board. Secondly, we are not satisfied, on the basis of the record before us, that Columbia Gas representation on the Columbia Oil board has been limited to a minority.

By virtue of its ownership of Columbia Oil's preferred stock, Columbia Gas elects three out of a total of seven directors of Columbia Oil. The common stock elects the remaining four but, as will be seen, most of the directors elected by the common stock have been persons who at some time in the past, were closely identified with Columbia Gas.

Pursuant to the undertaking contained in the stipulation described above, the by-laws of Columbia Oil were amended to include the following provisions:

1. Partial liquidation of Columbia Oil's debt to Columbia Gas.
2. Conversion of remainder to long term obligations.
3. Conversion of Columbia Oil classes of preferred into a single class to be held by Columbia Oil having the right to elect the largest minority of directors.
4. Assurance that the majority of the Columbia Oil board and all of its officers are not to be contemporaneously connected with Columbia Gas, and
5. Dissolution of the voting trust for Columbia Oil common stock

[fol. 10818] "Except for the Directors (constituting a minority of the whole Board) elected by the holders of the Preferred Stock, no person shall be elected a Director of the Corporation who is a director, officer or employee of Columbia Gas & Electric Corporation or any of its subsidiaries:

"No person shall be elected or appointed an officer of the corporation who is a director, officer or employee of Columbia Gas & Electric Corporation or any of its subsidiaries." (Emphasis supplied)

The use of the present tense in these provisions was apparently advised, as a resume of the management of Columbia Oil will reveal. The Columbia Oil board consists at the present time of seven directors: W. C. Beckjord, J. A. Bruce, R. H. Delafield, W. M. Falion, W. P. Philips, H. A. Wallace and Don M. Wilson.

Beckjord is Chairman of the Executive Committee, a Director and Vice-President of Columbia Gas.

Delafield is a Director and Vice-President of Columbia Gas.

Wallace is a Director and Vice-President of Columbia Gas.

Philips was, between 1926 and 1930, a Director of Columbia Gas. In 1934 he was chosen to succeed T. B. Gregory, a defendant in the anti-trust suit, and a Director and Vice-President of Columbia Gas, as a voting trustee for the common stock of Columbia Oil. Philips served as such until the termination of the trust in 1936.

Wilson, who joined the Columbia Oil board in 1937, had, but eleven days prior to that time, resigned as Director and President of the Atlantic Seaboard Corporation, a subsidiary of Columbia Gas. He had held that position since 1933.

There is no evidence that Messrs. Bruce or Falion (who were elected in 1938 and 1939 respectively) had any connection with Columbia Gas.

From the date of its organization to the present twenty different persons have served as directors of Columbia Oil.

All but three of these persons have at some time been either officers or directors of Columbia Gas. There have been twenty-five officers of Columbia Oil (including the voting trustees). Of these all but four have had some official connection with Columbia Gas. And two of the allegedly independent officers (W. A. Blind and C. H. Lavin) were personal employees of Munroe, who was a Director of Columbia Gas between 1929 and 1934, and a Director and President of Columbia Oil between 1931 and 1939.

We do not think, upon these facts, that it has been demonstrated that Columbia Gas and Columbia Oil have ever severed the avenue of influence by representation in management. Indeed, were we required to find affirmatively that Columbia Gas has been sedulous to insure continuous representation on the board of Columbia Oil, it would be difficult, on the basis of this evidence, not to make such a finding. The affiliations of three of the seven directors afford an admitted tie with Columbia Gas and this in itself is probably sufficient to negative applicants' case; in addition, with respect to two of the other directors, there is, at the very least, a strong link of historical relationship.

We cannot be asked to shut our eyes to "actualities in . . . intercorporate relationships" in determining the existence of control or controlling influence; *Rochester Telephone Corp. vs. United States, et al.*, 307 U. S. 125 (1939); nor can we be expected to ignore the fact that "historical ties and associations often serve as a substitute for, or a potent auxiliary of, the more obvious modes of control." *American Gas and Electric Company, 9 S. E. C. . . .* (1941), Holding Company Act Release 2749. We must conclude that the affiliations of the Columbia Oil board membership, from the date of its creation, indicate that its management and policies have always been subject to the controlling influence of Columbia Gas.

Columbia Gas and Columbia Oil, from the date of formation of Columbia Oil have had their offices at the same address.<sup>15</sup> And the affiliation between the two companies

<sup>15</sup>Up to 1932 Panhandle Eastern held its board meetings in the Columbia Gas board room at this address—51 Broadway. After that time its meetings were held in the board room of the Columbia Engineering

has, even since the date of the decree, been demonstrated by even more than the relationships through security holdings, directors and officers, and offices at the same address. In this connection, it becomes relevant to examine (1) a series of negotiations between Columbia Oil, Columbia Gas and the Mogan receivers for settlement of the Mogan claim for treble damages, and (2) certain transactions relating to the financing and construction of the so-called Detroit Extension for Panhandle Eastern.

#### (1) Negotiations Between Columbia Gas and Mogan Receivers

On January 31, 1936, Columbia Oil and Columbia Gas submitted an offer of settlement of the claims of the Mogan receivers. Its terms involved a recapitalization of Panhandle Eastern, a reallocation of the Panhandle Eastern securities as between Columbia Oil and Mogan, and an undertaking by Columbia Gas to finance the extension of Panhandle Eastern's lines to enable Panhandle Eastern to fulfill its contract with the Detroit City Gas Company.<sup>16</sup> The offer contemplated the issue by Panhandle Eastern of convertible preferred stock which would be taken by Columbia Oil,<sup>17</sup> the issuance of common stock, one-half of which [fol. 10820] would go to Mogan, and one-half to the Columbia interests; and the issuance of additional subscription rights to 160,000 shares of common stock, half of which would be taken by the Columbia interests and the remainder by Mogan, under an agreement by Mogan to distribute the warrants to its stockholders and to permit the Columbia interests to subscribe to any common stock not taken under the warrants distributed to Mogan stockholders.<sup>18</sup>

<sup>16</sup>This contract is discussed below.

<sup>17</sup>The agreement refers to \$11,000,000 par value of preferred stock which "we are to receive". The "we" refers to Columbia Oil and Columbia Gas.

<sup>18</sup>It is apparent that the offer intended no relinquishment of the Columbia control of Panhandle Eastern. The provision for convertible preferred stock—all of which was to go to Columbia Oil, and the requirement of distribution to Mogan stockholders of additional common stock would have had the clear effect of making any original equal division of common stock highly temporary.

The proposal served the purpose of placing Columbia Gas and Columbia Oil in the position of having made an offer—a token satisfaction of

The Moka receivers refused to accept this offer. Negotiations, however, proceeded in an attempt to reach adjustment. Much correspondence and at least ten conferences were had in the course of arriving at a final settlement. In none of these conferences was Panhandle Eastern or Columbia Oil independently represented. Reynolds, who had been since 1934 a Director of Columbia Gas, who became its President during the course of the negotiations and who was not during their pendency connected with Columbia Oil in any official capacity, was the exclusive representative of Columbia Gas, Columbia Oil and Panhandle Eastern.

The fact that in significant negotiations vitally affecting the interests of Columbia Oil and involving extremely important changes in the capital structure of Panhandle Eastern, no independent representation was had for Columbia Oil or Panhandle Eastern is, we believe, highly indicative of the relationship between Columbia Gas and Columbia Oil and between Columbia Gas and Panhandle Eastern.

The inference is strengthened by the result of the negotiations: the present capital structure of Panhandle Eastern. At present Columbia Oil is the beneficial holder of all of Panhandle Eastern's preferred stock, and over half of its common. The rights for which Columbia Gas negotiated in the settlement with the Moka receivers have been substantially preserved. The Moka receivers agreed to distribution of the block of rights to 80,000 shares of Panhandle Eastern—which eventually reduced Moka's common stock participation to 42%. In the exchange for the convertible preferred stock Columbia Gas procured for Columbia Oil all of the Class B, irredeemable preferred stock giving it the right to select two out of Panhandle Eastern's nine directors. By virtue of Columbia Oil's holdings in the common stock, it selects an additional four directors; and although one of these must be the trustee, the remainder chosen constitute the majority of Panhandle Eastern's board. Columbia Gas bargained for a preferred stock redeemable after 1936 at 110%, and it was successful in procuring for Columbia Oil Panhandle Eastern's Class A preferred, which is redeemable after July 1, 1941, at a \$10 premium. The original bargain for full voting rights for Panhandle Eastern preferred stock has been

modified, but without prejudice, for Columbia Oil has retained the right to select a majority of the Panhandle Eastern board. A "certain flow of earnings" and "future voting rights" were assured.

These negotiations indicate that when the stakes were high Columbia Gas did not resort to the intermediacy of Columbia Oil in its relations with Panhandle Eastern. Another instance of this direct relationship is found in the transaction relating to the so-called Detroit Extension.

## (2) The Detroit Extension

On August 31, 1935, Panhandle Eastern entered into a contract with the Detroit City Gas Company<sup>19</sup> to supply gas to that company for resale in the Detroit area.<sup>20</sup> At that time, as now, Panhandle Eastern's own pipe line extended to the Indiana-Illinois border, whence its lines met the lines of Indiana Gas Transmission Corporation, a subsidiary of Columbia Oil. To fulfill the contract, Panhandle Eastern was required, by its terms, to satisfy the Detroit City Gas Company by February 1, 1936—six months after the contract date—that it had arranged for the financing of an extension of its lines in order to connect with the Detroit Company, and that it had made satisfactory arrangements for financing additional construction on its own lines.

There appears never to have been any question in the minds of the Columbia group but that Columbia Oil or Columbia Gas would build and own the extension necessary to meet the Detroit requirements. Yet it was necessary, pursuant to agreements with the Department of Justice made prior to the entry into the stipulation and consent decree in the anti-trust suit, that Panhandle Eastern be given an opportunity to secure outside financing for the building of the Detroit extension. Accordingly, in an agreement dated January 31, 1936, Panhandle Eastern was

<sup>19</sup>This company is now known as Michigan Consolidated Gas Company.

<sup>20</sup>W. C. Beckjord was instrumental in negotiating this contract. Beckjord has been a Director of Columbia Gas from 1934 until the present time. From 1936 until the present, he has also been a Director of Columbia Oil, chosen by the preferred stock held by Columbia Gas.



given a twenty-day option to accept or reject an offer made by Columbia Gas to build the Detroit extension.<sup>21</sup>

[fol. 10822] The option like other transactions we have discussed appears to have been merely a token. Panhandle Eastern undertook no negotiations to secure outside financing.<sup>22</sup>

Columbia Gas promptly undertook to inform Detroit City Gas Company that it had offered the necessary financing to satisfy the requirements of the contract of August 31, 1935. The Detroit Company thereupon bound itself under the contract.

Columbia Oil, unless it could procure financial aid, was unable to finance the Detroit extension. The result was patent. On November 4, 1935, Columbia Gas formed the Michigan Gas Transmission Corporation with Beckjord as President for the purpose of building the Detroit extension.

The machinery for complete ownership by Columbia Gas of the lines meeting Panhandle Eastern's lines and extending into Detroit, was effected in the space of four days by the acquisition by Columbia Gas from Columbia Oil of all of the securities of Indiana Gas Transmission Corporation.<sup>23</sup> These transactions took from February 28 to March

<sup>21</sup>Under this contract, which was dated two days after the consent decree, Columbia Oil undertook to purchase one-half of an additional issue of common stock of Panhandle Eastern to provide it with necessary funds for additions to its lines to enable adequate service under the Detroit contract. This is the block previously referred to in connection with the Mokan settlement, which increased Columbia Oil's common stock participation in Panhandle Eastern to 50.1% as against Mokan's 42%.

<sup>22</sup>It probably could not have done so successfully. It had outstanding at that time bonds and notes. Although the interest requirements of its bonds had been met, Columbia Oil was in a position to put Panhandle Eastern into bankruptcy by reason of its ownership of these bonds. They were in default because of a provision in the indenture which made a default in the notes an act of default with respect to the bonds, and the notes were in default. The provision referred to was the result of an amendment to the indenture authorized by the Panhandle Eastern board at a meeting held on March 26, 1931. Present at that meeting were Messrs. Crawford, Gossler, Gregory, Munroe and Howard, each one of whom was a Director of Columbia Gas.

It is noteworthy that at the time that Columbia Oil and Columbia Gas were negotiating the offer of financing, Columbia Oil and Panhandle Eastern were represented by the same attorneys.

<sup>23</sup>Columbia Gas had merely to forgive Columbia Oil its indebtedness upon extensions made to it to acquire Indiana Gas in order to get Columbia Oil to surrender the securities of Indiana Gas.

3, 1936.<sup>24</sup> Thus, Columbia Gas, through its completely controlled subsidiaries, Michigan Gas and Indiana Gas Transmission Corporation, controls the eastern outlet of the Panhandle Eastern lines. Michigan Gas' pipe lines are the medium for the sale of at least 65% of the gas sold by Panhandle Eastern.

[fol. 10823] On March 17, 1936, Panhandle Eastern contracted to supply gas to Michigan Gas to satisfy the requirements of the Detroit City Gas Company. Payments for gas supplied on contracts negotiated by Panhandle Eastern in the territory were to be impressed with a charge in favor of Michigan Gas which would put it in the same position as though Michigan Gas had sold the gas to its own customer—the Detroit Company. Although Michigan Gas bound itself to assign to Panhandle Eastern contracts in this territory which Michigan negotiated, the same charge was to be exacted.<sup>25</sup> The terms of sale of gas to "Special Industrial Customers" were to be negotiated through individual contracts between Michigan Gas and Panhandle Eastern.

The contract envisaged a continuous inter-company relationship of vital importance to the well-being of Panhandle Eastern. Thus the ownership of the Detroit extension becomes still a further link in the chain between the applicants.<sup>26</sup> There exist no external guarantees which would warrant a holding that economic control as vital as

<sup>24</sup>Indiana Gas Transmission Corporation owned lines which touched Panhandle Eastern's lines at the western Illinois border and extended to the Illinois-Indiana border.

<sup>25</sup>The contract provided that if Panhandle should refuse to accept such an assignment, Michigan Gas might call upon it to supply sufficient gas to satisfy the contract, so as to yield the stated benefit to Michigan Gas. Although, conversely, Michigan undertook to accept Panhandle Eastern's additional gas, it conditioned the contract so that it was not liable to accept beyond that point at which its capacity to supply its own commitments would be prejudiced. Significantly, Michigan Gas held itself free to accept as much as 500,000,000 cubic feet of gas per annum from sources other than Panhandle Eastern.

<sup>26</sup>In the case of Hartford Gas Company, 8 S. E. C. .... (1941), Holding Company Act Release No. 2618, we treated as material to a denial of an application under Section 2 (a) (8) the fact that the applicant was dependent for the bulk of its gas requirements upon a subsidiary of the applicant's holding company. We there distinguished the Lehigh Power Securities Corporation case, 5 S. E. C. 143 (1939) on the ground that no guarantees of misuse of such an avenue of control ex-

[fol. 10824] that held by Columbia Gas cannot be used as a lever for other forms of domination.<sup>27</sup>

In a recent opinion affirming an order of this Commission denying an application under Section 2 (a) (8), the Circuit Court of Appeals for the Sixth Circuit expressly recognized the importance in such cases of factors indicating continuity of relationships between holding companies and subsidiaries. The Court, speaking through Judge Hamilton, said:

"The Statute contemplates action prospectively. It is a preventive measure intended to regulate action before the interests of those concerned are adversely affected. The prime factors in determining statutory exemption are the size and extent of the company involved, the inter-company relationship, the distribution of its securities and the opportunity presented because of the relationship between the parent and subsidiary for excessive charges for services, construction work, equipment and materials and the transactions entered into in which evil may result, because of the absence of arms-length bargaining or restraint of free and independent competition." *Detroit Edison Company vs. Securities and Exchange Commission*, decided May 12, 1941.

### The Strategic Position of Columbia Oil's Preferred Stock

Columbia Oil's preferred stock is not only entitled to elect the largest minority of directors and to have equal

voted there. In the *Lehigh* case we noted, of a relationship of dependency for requirements that

"such relationship might, unless mitigated by other circumstances, be used to exercise some control or at least a controlling influence over applicant."

The fact that this case involves access to markets rather than dependency for requirements is not itself a ground for distinction. Both forms of control may involve the power of economic strangulation.

"The pendency of the consent decree is, itself, of little significance as a guarantee against use of the *Petrol* extension for control purposes. As will be shown, the Federal Court which issued the decree has interpreted it as operating only in the realm of restraint of trade. There exists no machinery for continuous policing of the affairs of these companies and the judicial settlement of any disputes that may arise concerning the effect of the decree on their relationship will, in all probability, be effected against the background of this limitation. The Department of Justice itself in a supplemental complaint in the anti-trust suit has alleged that by reason of its control over the extension "Columbia Gas increased its control over Panhandle Eastern."

voting rights with the common on all other matters, but it has certain important veto powers in the affairs of Columbia Oil. By reason of its ownership of that stock Columbia Gas may prevent (inter alia) the creation or issuance [fol. 10825] of any shares of stock, other than common, or any merger, consolidation, sale, lease or other transfer of all or the greater part of the assets of Columbia Oil.

Taken together with other factors the existence of this power—although occasion for its use may not have arisen in the past—is significant in indicating the existence of a controlling influence. Columbia Oil, in its annual report for 1940 has scheduled its assets at \$62,435,561.46. Its investment in Panhandle Eastern is carried at \$23,278,509.99. Its assets other than investment in Panhandle Eastern are carried at \$34,788,196.04. On the basis of these figures the value of the Panhandle Eastern investment is less than half of the total assets. However, in an opinion attached to Columbia Oil's 1940 report to its stockholders, Price, Waterhouse & Company stated that experts had valued the properties other than Panhandle Eastern at between \$12,000,000 and \$20,000,000, the latter figure being fixed by a director of Columbia Oil in hearings before the Federal District Court. Should these figures be taken as approximately representative, the Panhandle Eastern investment is more than half of Columbia Oil's total assets. Columbia Oil could not in this event sell the Panhandle Eastern investment without Columbia Gas' consent, in view of the provision already mentioned regarding the sale of the greater part of Columbia Oil's assets.

When other factors indicate the absence of control or controlling influence within the meaning of Section 2 (a) (7) or 2 (a) (8), it may be that the possession of veto power over corporate changes is not exclusively determinative. See Allied Chemical & Dye Corporation, 5 S. E. C. 151 (1939). This does not mean, however, that we can ignore the cumulative effect of such a veto power when other factors of control exist, as they do in this case.

Upon the basis of the foregoing, we hold that applicants have not demonstrated that Columbia Oil is not subject to the control or controlling influence of Columbia Gas. Cf. Detroit Edison Company vs. Securities and Exchange Com-

mission, (C. C. A. 6th, decided May 12, 1941), Rochester Telephone Corporation vs. United States, 307 U. S. 125 (1939); American Gas and Electric Company, 9 S. E. C. (1941), Holding Company Act Release No. 2749; H. M. Byllesby & Company, 6 S. E. C. 639 (1940); The Hartford Gas Company, 8 S. E. C. (1941), Holding Company Act Release No. 2613. Indeed, we think that the record affirmatively shows the existence of such control and controlling influence.

### Relationship between Columbia Oil and Panhandle Eastern<sup>28</sup>

Whatever the relationship between Columbia Oil and Panhandle Eastern may have been prior to January 29, 1936, both companies claim that date—the day of entry of [fol. 10826] the consent decree in the government anti-trust suit—as of primary significance in their history. On that day, it is claimed, the interposition of Gano Dunn as trustee under the decree to hold all of the voting securities of Panhandle Eastern owned by Columbia Oil insulated Panhandle Eastern from Columbia Oil control. We do not believe that this, in fact, occurred and it may well be doubted that the decree attempted to provide for it—at least with respect to the question as it is presented under Section 2 (a) (8) of the Act.

It will be recalled that although the decree directed Gano Dunn to take possession of Columbia Oil's holdings of Panhandle Eastern's stock, Gano Dunn was nevertheless subjected by the terms of the decree to the exercise of Columbia Oil's will in the voting of these securities in extremely important respects. By reason of Columbia Oil's ownership of Panhandle Eastern's securities it is able to elect six out of nine directors. The trustee votes for these directors, and one of them must be himself. Columbia Oil cannot recommend any of the defendants in the anti-trust action or any person "who after January 1, 1931, has been or hereafter becomes an officer, director,

<sup>28</sup>Many of the facts and transactions already discussed have a material bearing on the relationship between Columbia Oil and Panhandle Eastern and have also been considered by us from that point of view.



agent or employee of Columbia Gas."<sup>29</sup> Except for this limitation, however, the consent decree gives Columbia Oil complete freedom to recommend a panel to Gano Dunn from which he must select the majority of the Panhandle Eastern board.

In all other respects Gano Dunn must vote the stock of Panhandle Eastern as Columbia Oil directs "except when such directions are inconsistent with the purposes of this decree." Mr. Dunn has expressly stated that he has never declined to follow any instruction given him by Columbia Oil respecting the voting of the stock.

In the proceedings before the trial examiner repeated colloquies took place with respect to the proper interpretation of the decree. It was contended by the applicants that the decree had as its purpose the complete quarantine of Panhandle Eastern from Columbia Gas. It was contended on behalf of the Public Utilities Division that the decree was addressed solely toward assuring that the control of Panhandle Eastern shall not be used for the purpose of restraint of trade.

The decree itself is open to construction on this point. Among its recitals appear the following:

"... and it further appearing from said stipulation that the petitioner and the defendants have agreed that provision against domination for control, direct or indirect, in the affairs of Panhandle Eastern Pipe Line Company by the defendant Columbia Gas and Electric Corporation and the maintenance of said Panhandle Eastern Pipe Company in a position of free and independent action in the production, transmission, sale and distribution of natural gas in competition with others constitutes the proper basis for the entry of this decree;"

[fol. 10827.] Although the decree purports to enjoin the defendants from "interfering in any manner with the free and independent action of said Panhandle Eastern in the production, transportation, sale or delivery of natural gas to any person, corporation, community or section of the United States" it also purports to enjoin defendants

<sup>29</sup>Such persons may however be recommended with the approval of the court and the trustee.



"from exercising, or attempting, individually or collectively, directly or indirectly, to exercise any domination or control over Panhandle Eastern : . . ." and "from participating in any way directly or indirectly, or from exercising any control, direction, supervision, or influence, in the management and control of Panhandle Eastern;"

We do not believe it necessary to construe the decree. The evidence is more than sufficient to satisfy us that in respect of at least the selection of the management of Panhandle Eastern, and the supervision of its financing, the trustee has abided by the terms of the decree, as he has understood it, and has considered himself bound by the wishes of Columbia Oil.<sup>30</sup> We cannot and do not desire to explore the question of whether the history of the applicants in these proceedings since the date of the decree indicates any violation of its terms. We have, on the basis of the record before us, concluded that the decree has not operated to negate the existence of control or a controlling influence within the meaning of Section 2(a) (8) of the Public Utility Holding Company Act, and our findings are limited exclusively to the issues arising under that Section.<sup>31</sup>

#### [fol. 10828] The Consent Decree And The Origin of Panhandle Eastern's Capital Structure

The history and the results of the negotiations between the Columbia companies and the Moka receivers in settle-

<sup>30</sup>Mr. Dunn stated, in the hearing before the trial examiner that he could veto instructions of Columbia Oil only when he thought that fulfilling them would result in restraint of trade.

<sup>31</sup>In a decision refusing to take Federal jurisdiction over a suit brought by Moka, to compel Columbia Oil to permit the refinancing of Panhandle Eastern's Class A preferred stock (which will be commented on herein), Judge Kirkpatrick, of the Delaware District Court held that an action in the State Court for this purpose, did not constitute an attack upon Federal jurisdiction. It was his view that the decree was not intended as a means of supervision of the relationship between the Columbia companies but that:

"The decree was, by its express terms and by all the implications arising from its background, primarily designed to prevent Columbia Oil and its affiliates from dominating and controlling Panhandle Eastern in such a manner as to eliminate competition between it and other companies and so monopolize interstate commerce in natural gas in certain sections of the country." (Missouri-Kansas Pipe Line vs. Columbia Oil & Gasoline Corp., et al., Civil Action No. 172, District Court of Delaware, 1941).

ment of the receivers' claims for treble damages indicate the lack of merit in the claim that the decree insulated control between the Columbia companies and Panhandle Eastern.

At the commencement of negotiations on January 31, 1936, Columbia Oil owned 50% of Panhandle Eastern's common stock, all of its outstanding bonds in the amount of \$18,200,000 and 50% of its promissory notes in the amount of \$4,945,500. 50% of Panhandle Eastern's common stock and 50% of its promissory notes were held by Panhandle Corporation. As has been noted, the stipulation entered into, in connection with the consent decree, on January 29, 1936, required Columbia Gas to make an offer of settlement of the Mokon receivers' claim. Accordingly, on January 31, 1936, the Columbia companies made an offer which contained (inter-alia) proposals to recapitalize Panhandle Eastern by having its 6% promissory notes converted into 6% convertible preferred stock<sup>32</sup> and by having Panhandle Eastern issue warrants for an additional 160,000 shares of common stock. It was proposed, in the original offer of settlement, that Columbia Oil receive rights to 80,000 shares, and that a distribution of the remaining rights would be made to Mokon stockholders.

On the same day, before there was any indication that the offer would be accepted—and in fact with every probability that it would be rejected (as it was in fact, because of the proposal to give Columbia Oil a convertible preferred stock enabling it to increase its participation in Panhandle Eastern's common stock), Panhandle Eastern's Certificate of Incorporation was amended to provide for the issue of convertible preferred stock and to authorize an increase in its common stock. On March 24, 1936, Panhandle Eastern authorized the offering of rights to the common stock, and on April 1, 1936, Columbia Oil exercised its option and acquired an additional 80,000 shares of Panhandle Eastern common stock.

<sup>32</sup>The ability to make such an offer was unquestioned. Although Columbia Oil held, directly, 50% of the notes, it had, on June 19, 1935 entered into agreements to purchase 75% of the stock of Panhandle Corporation, and it received that stock, in fact, on February 6, 1936, before the complete negotiation of settlement. On the same day, it acquired all of the outstanding indebtedness of Panhandle Corporation.

In April of 1936 the Columbia companies and the Moka receivers agreed upon a settlement. This settlement formed the basis for the present structure of Panhandle Eastern. Columbia Oil acquired all of the preferred stock. Although the bargain for a convertible issue of preferred was given up, Columbia Oil retained indefinite [fol. 10829] ly the right to elect two directors by reason of its ownership of the Class B preferred which is not subject to redemption, and by virtue of its ownership of the common stock it may select another four—one of whom must be the trustee. The Columbia companies were eventually successful in scattering Moka's block of 80,000 shares of common stock by requiring distribution of this stock to Moka's shareholders. This has resulted in a 50.1% ownership of common stock by Columbia Oil as against a 42% ownership by Moka. At a special meeting of stockholders of Panhandle Eastern, Gano Dunn voted in favor of amending the Certificate of Incorporation to effectuate the terms of the settlement.

Panhandle Eastern was supine during this critical period. On appropriate occasions it undertook the formal acts which it was called upon to perform in order to effectuate the will of the Columbia companies. Unrepresented in the negotiations, it did as it was bidden. The interposition of a trustee for its voting stock had no effect on the result, for the trustee construed the decree not to permit him to interfere with the settlement.

#### The Effect of The Interposition of The Trustee on The Management of Panhandle Eastern

The stock of Panhandle Eastern held by the trustee is entitled to elect the majority of its board, and since this stock consists of all the preferred and 50.1% of the common stock its voting power on other corporate matters (amounting to 56.1%) is decisive. The cumulative voting of the common stock gives Moka (a 42% common stockholder) the right to select three of a board of nine members.<sup>33</sup>

<sup>33</sup>The relations between the Moka and Columbia directors of Panhandle Eastern are, to say the least, acrimonious. Repeatedly during the period from the consent decree to the present the Moka directors have attempted to induce Panhandle Eastern to offer active resistance to Columbia domination. On one occasion an unsuccessful attempt was

[fol. 10830] The dominant position of Columbia Oil in Panhandle Eastern, in spite of the interposition of the trustee, has been illustrated in at least two critical instances which merit particular consideration. The first concerns a transaction whereby Columbia Oil assured itself a veto power over future bond financing of Panhandle Eastern as long as it controlled a majority of stock entitled to vote for directors; the second relates to the blocking of the refinancing of Panhandle Eastern's Class A preferred Stock.

(1) The Stockholders Consent Clause:

On October 4, 1940, the directors of Panhandle Eastern authorized its officers to report on a plan for the refunding of an issue of Panhandle Eastern's outstanding bonds.<sup>34</sup> A report was made after conference with Kuhn, Loeb & Co. which proposed, among other things, an open-end indenture. That proposal was made in direct contemplation of future financing for the purchase, if opportunity presented, of the securities of Michigan Gas.<sup>35</sup> Kuhn, Loeb & Co. were suggested as the refunding underwriter.<sup>36</sup> The plan proposed by the officers was accepted by the board.

On November 15, 1940, the President of Panhandle Eastern reported to the board that between meetings of the

made to challenge votes at a stockholders' meeting cast by the trustee and to take over control of the meeting. On another occasion Mogan charged continuation of "illegal control" of Panhandle Eastern, and demanded unsuccessfully that Panhandle Eastern institute various suits for damages for violation of the anti-trust laws and contempt of the consent decree. The position of Mogan in the proceedings before us has been adversary to that of the Columbia companies. Two of the present directors of Panhandle Eastern elected by Mogan holdings have filed on their own behalf a request that we disapprove of the application of Panhandle Eastern not only on the ground of Columbia control, but on the further ground that the application was filed in bad faith.

<sup>34</sup>This was an issue of \$22,500,000 of 4% first mortgage bonds.

<sup>35</sup>Such a purchase would result in Panhandle Eastern's ownership of pipe lines from its southern fields directly to ultimate purchasers in the Detroit region.

<sup>36</sup>At a meeting of the Panhandle Eastern board on November 8, 1940, the Mogan directors suggested invitation of bids from other houses and acceptance of the lowest bid. Mr. Dunn, and the directors elected by the Columbia Oil stock defeated the resolution.

Board, a change had been made in the indenture which was to underlie the refunding bonds. It would contain a provision which conditioned any farther financing under the indenture upon the approval of the majority stockholder—Columbia Oil.<sup>37</sup>

Columbia Oil had interdicted approval of the indenture unless this clause were inserted. Some protest was made by Panhandle Eastern to Columbia Oil that the restriction was an "unusual" one, but to no avail. The trustee [fol. 10831] was instructed to vote in favor of the consent clause, and he informed the Panhandle Eastern board that the terms of the consent decree required him to obey these instructions.<sup>38</sup>

With one exception, the Columbia Oil directors, including the trustee, voted in favor of the amendment. J. A. Bowers was the exception. A short time after the meeting J. A. Bowers resigned. The amendment was approved by the Panhandle Eastern board, and at the following stockholders' meeting the trustee voted the stock he held in its favor.<sup>39</sup>

The clause is of vital significance. At a later point we will discuss a so-called "Plan of Divestiture" whereby the Columbia companies propose to effectuate the elimination of chain holdings. Under this plan Columbia Oil will retain its holdings in Panhandle Eastern. It proposes, however, to secure the resignation of every member of its board in favor of persons not objectionable to the Depart-

<sup>37</sup>The amendment provided that if at any time 50% or more of the outstanding shares of all classes entitled to vote for the election of directors shall be held of record by one person, partnership or corporation, the registrant shall not execute any such additional bonds (except bonds issued upon the basis of cash deposited with the corporate trustee) without the formal approval, either in writing or at a meeting of the stockholders of the registrant called for the purpose of considering such approval.

<sup>38</sup>At this meeting of the board (November 15, 1940) the Moka directors of Panhandle Eastern introduced a resolution—which was tabled against their vote—to the effect that the application of Panhandle Eastern then pending in this proceeding be withdrawn. The grounds of the resolution were that the forcing of the amendment indicated the existence of control and that, therefore, the application was not in good faith.

<sup>39</sup>Counsel for Columbia Oil justified the clause on the ground that without it "they (Panhandle Eastern) could mortgage our property without our consent."



ment of Justice. The members will be its representatives on the Panhandle Eastern Board. By securing the consent clause Columbia Oil was attempting to bind the freedom of Panhandle Eastern—so that no plan of divestiture affecting the external relationship of Columbia Oil with Panhandle Eastern could disturb Columbia Oil's grip on the security of its investment.<sup>40</sup>

Columbia Oil's success in procuring the insertion of the consent clause is illustrative of the degree to which the majority of the directors of Panhandle Eastern regarded themselves as bound by the will of Columbia Oil. The Certificate of Incorporation of Panhandle Eastern, as amended to May 1, 1938, contains the following provision:

"No vote, consent or assent of stockholders of the corporation shall be required to authorize the issuance of bonds, notes or other obligations of any maturity, secured or unsecured, or to authorize a mortgage upon or pledge of all or any part of the assets of the corporation including good will, corporate franchises, and after acquired property, but the issue of such obligations and the creation of such mortgage or pledge may be authorized by the Board of Directors upon such terms and conditions as they may at any time or from time to time determine."

[fol. 10832] There is no evidence that this clause was amended or deleted at the time the preparation of the indenture was being undertaken. If the terms of this provision were determinative of the relative powers of the directors and stockholders of Panhandle Eastern with respect to the bonding of its property, the subjection of Panhandle Eastern's directors to the will of Columbia Oil cannot be said to have derived solely from Columbia Oil's stock position. It must be inferred either that the directors were ill advised as to their own powers or that they regarded themselves as obliged to follow the directions of Columbia Oil whether or not Columbia Oil had the power to require compliance with its wishes.

We have no concern in this proceeding with the legitimacy of the consent clause, or the business wisdom behind it. It is important for our purpose because it indicates the

<sup>40</sup>This was substantially the explanation offered by the trustee.



ease with which Columbia Oil has been able to direct the management and policies of Panhandle Eastern in accordance with its own wishes.<sup>41</sup>

It has been urged upon us that the Department of Justice "had no objection" to inclusion of the stockholders' consent clause. But even the express approval of the Department would be of no relevancy to the issue here. As we have already stated, we are not concerned with the construction of the consent clause. The only question we have to decide is whether the evidence before us demonstrates a lack of control or controlling influence as those terms are used in Section 2(a) (8) of the Holding Company Act.

## (2) Refinancing of the Preferred Class A

The \$10,000,000 of Panhandle Eastern's Class A preferred stock was one of the successful features of the bargain driven by Columbia Gas in its settlement with the Moka receivers. This preferred stock is entitled to preferential dividends of \$6 per share, and is cumulative to the extent of net earnings available for preferential dividends (not exceeding \$6). In addition, after certain reserve [fol. 10833] requirements have been met, and dividends on the common stock to the extent of \$1.50 per share have been declared or paid, the Class A stock participates in any additional dividends to the extent of 25%. Columbia Oil has received dividends on this stock as high as 10%.

The Panhandle Eastern Certificate of Incorporation contains the following provision:

"The testimony regarding the consent clause brought to light the weakness of Moka's position in Panhandle Eastern. On Oct. 15, 1940, Wilson, Vice-President of Columbia Oil had occasion to suggest to the trustee that he observe discretion with regard to disclosing too many of the details of Panhandle Eastern's negotiations with Kuhn, Loeb & Co. Wilson wrote to the trustee: "Sperry (treasurer of Panhandle Eastern) is very anxious that it not be known that they have the figures at the present time, his reason being that Mr. Maguire (one of the Moka representatives on the Panhandle Eastern board) would in all likelihood take them to Gore Forgan and complicate the set-up." It will be recalled in this connection that Moka was attempting to secure competitive bidding for the issue.

Sperry admitted that no more than a skeleton proposal was submitted to the Panhandle Eastern board—and that they were not presented with detailed figures until the figures had been submitted to the Columbia Oil management.

"The Class A Preferred Stock at any time outstanding may be redeemed at any time by the corporation, at its election expressed by resolution of the Board of Directors, in whole or in part from time to time, upon not less than thirty nor more than sixty days' notice to the holders of record of the Class A Preferred Stock to be redeemed, . . . by the payment in cash for each share of the said stock so to be redeemed of One Hundred Dollars (\$100) if redeemed on or before July 1, 1941, or One Hundred and Ten Dollars (\$110) per share if redeemed thereafter, and in each case in addition thereto an amount which together with the aggregate of the preferential dividends paid upon such shares during the period from January 1, 1936, will be equal to their full cumulative preferential dividends for the calendar year 1936 plus six dollars (\$6.00) per share per annum from January 1, 1937 to the date of redemption."

Since April of 1937 various proposals have been made to refinance this Class A stock, all of which is held by Columbia Oil. These proposals and attempts to put through such a refinancing have failed—and the history of that failure is a significant indication of Columbia Oil's control over Panhandle Eastern.

Proposals to refinance the preferred stock made in 1937 were met by Columbia Oil's insistence that the refinancing take place simultaneously with the refunding of Panhandle Eastern's bonds.<sup>42</sup> During 1937 and 1938 it was believed by some of Panhandle Eastern's officers that the condition of the market made necessary a convertible issue of preferred to refinance the outstanding preferred. The Mokon interests refused to make any attempts to secure waivers from the minority common stockholders of pre-emptive rights to new common. This, it was claimed, made impossible the issuance of convertible preferred stock—and dampened efforts at refinancing.<sup>43</sup> There was, however, no indication that Columbia Oil would consent to even a convertible issue during the early stages of the refinancing proposal.

<sup>42</sup>This refunding has been referred to herein in connection with the stockholders consent clause.

<sup>43</sup>Undoubtedly the Mokon interests were resisting an attempt to dilute their already sub-dominant interests.

[fol. 10834] It will be recalled that pursuant to the settlement with the Mogan receivers, rights to 80,000 shares of Panhandle Eastern's common stock were to be distributed to Mogan stockholders. During the early part of 1939 hearings in the Delaware Chancery Court were being held on the question of this distribution.<sup>44</sup> Because of the pendency of this proceeding the Panhandle Eastern Board, on January 25, 1939, abandoned plans for selling convertible preferred stock. The alleged reason was that the outcome of the proceedings "had a vital bearing on the type of financing which it was possible to do at that time."<sup>45</sup>

On June 21, 1939, the Delaware Chancellor ordered a distribution of the 80,000 shares of Panhandle Eastern's common stock to Mogan stockholders. The tension was broken. A substantial block of stock in the hands of an adversary had been smashed, and in July of 1939 the Finance Committee of Panhandle Eastern was ready to recommend continuation of negotiations with Kuhn, Loeb & Co. for a 4½% cumulative preferred stock without a conversion feature.

It is apparent that up to this time the dominant factor in the timing of the action of the Panhandle Eastern Board was the relative control positions of Columbia Oil and Mogan. The distribution of a strategic block of stock was the "vital" factor in "the type of financing which it was possible to do at that time". When the block was broken it became "apparent", according to the testimony of Sperry, treasurer of Panhandle Eastern, "that we could sell an issue without the conversion privilege attached".

But a new barrier was presented. On August 7, 1939, Creveling, president of Panhandle Eastern and chairman of its board, reported that Columbia Oil had determined

<sup>44</sup>Although Sperry, treasurer of Panhandle Eastern testified that hearings on the plan of divestiture (filed in the anti-trust suit) pursuant to which Columbia Gas was to give up its voting interest in Columbia Oil, were in progress at the same time, this is apparently an error. Panhandle Eastern's application states the filing of the plan to have occurred "on or about June 20, 1939." At a meeting of the Panhandle Eastern board on January 11, 1939, reference was made to proceedings in the Federal Court which would commence on January 12, 1939. The reference is apparently to the filing of the government's amended complaint.

<sup>45</sup>Testimony of Sperry, treasurer of Panhandle Eastern.

that the pendency of the plan of divestiture before the Federal Court made plans for refinancing "premature".

Panhandle Eastern tried again, in what was deemed a reviving market, in November of 1939. This time negotiations were undertaken for a joint refunding of the bonds and refinancing of the preferred (the action previously recommended by Columbia Oil) with Kidder, Peabody & Company and Glore, Forgan & Company. On December 28, 1939, the Panhandle Eastern directors recommended to Gano Dunn a program of refunding and retirement. On [fol. 10835] January 19, 1940, Gano Dunn conveyed to the board of Panhandle Eastern the sentiments of Columbia Oil: Columbia was unwilling to consider, at that time, the refinancing of the preferred stock. This ended Panhandle Eastern's efforts at refinancing. Panhandle Eastern, in the face of a market which it appears would have absorbed a refinancing at  $4\frac{1}{2}\%$  is still saddled with a 6% cumulative, participating preferred stock which paid in 1940 a dividend of 10%; and which, according to its terms, after June 1, 1941, would cost the company a premium of \$1,000,000 should it attempt a refinancing.

Here again we are not concerned with the validity of Columbia Oil's reasons for withholding its assent to the refinancing. Our concern is the evidence as it relates to control. On the record before us, we think it is eminently clear that applicants have not demonstrated that Panhandle Eastern is not controlled by or subject to the controlling influence of Columbia Oil.

#### Relationship Between Panhandle Eastern and Moka

Our discussion to this point indicates that Moka's position in the affairs of Panhandle Eastern has been in direct opposition to that of the Columbia companies;<sup>46</sup> and that Moka, at least to date, has not been able to exercise any "controlling influence" (as that term is used in the statute) in the affairs of Panhandle Eastern.

The record shows consistent attempts by the Moka interests to affect the affairs of Panhandle Eastern. The coexistence of the dominant holdings of Columbia Oil

<sup>46</sup>See notes 33 and 41, *supra*.

have rendered these attempts futile. So long as Columbia Oil retains its relative position, it is difficult to see how Mokon can succeed in exercising control or a controlling influence in the affairs of Panhandle Eastern. There is no occasion for now holding Panhandle Eastern to be a subsidiary of Mokon and we believe that Panhandle Eastern's application to be declared not to be a subsidiary of Mokon must therefore be granted. The sub-dominant position of Mokon, however, depends directly on the maintenance intact of the Columbia Oil block. Should this block be broken, it may well be that Mokon would obtain control of Panhandle Eastern. In view of this possibility, we will expressly condition our order, as the statute contemplates, to provide that we may, upon appropriate notice and opportunity for further hearing, reopen the proceeding to examine the effect of any changes in the ownership of Panhandle Eastern's securities upon the issues here presented; and, if the additional evidence warrants such action, revoke our order granting the application.<sup>47</sup>

[fol. 10836] The Plan of Divestiture and The Young Suit

In the course of the hearing before the trial examiner a dispute arose as to the admissibility of certain evidence proffered on behalf of Columbia Oil and excluded by the trial examiner. We are requested to review this ruling. In order to define the issues presented by the ruling it is necessary to comment on certain further proceedings in the anti-trust suit relating to the so-called plan of divestiture.

On or about June 20, 1939, a motion was made on behalf of the Columbia companies for modification of the consent decree in order to implement the provisions of an agreement between those companies allegedly designed to effectuate a divorce of Columbia Gas control over Columbia Oil and Panhandle Eastern.

<sup>47</sup>Section 2(a) (8) provides in part:

The Commission, upon its own motion or upon application, shall revoke the order declaring such company not to be a subsidiary company whenever in its judgment any condition specified in clause (i), (ii), or (iii) is not satisfied in the case of such company.



The events immediately preceding the filing of this plan are pertinent. On January 12, 1939, pursuant to leave of court the government filed a supplemental complaint in the anti-trust suit based on the theory that "The course of events since the entry of said (consent) decree has, however, made it increasingly clear that said decree has been and is ineffectual toward the accomplishment of this specific purpose . . ." i. e., the termination of the "domination or control, direct or indirect, in the affairs of Panhandle Eastern Pipe Line Company by the defendant Columbia Gas & Electric Corporation."

The plan suggested by the Columbia companies includes the following provisions:

1. Columbia Oil will transfer to Columbia Gas all of its properties except for its interest in Panhandle Eastern (this will consist of the outstanding securities of five oil and gasoline subsidiaries),

2. Columbia Gas will surrender to Columbia Oil the preferred stock of Columbia Oil which it holds,

3. "Columbia Oil will agree to use its best efforts to dispose of the \$10,000,000 Class A preferred stock of Panhandle Eastern owned by it, at not less than par, to a purchaser who has no connection or interest, direct or indirect, with or in Columbia Gas or through the refinancing thereof by Panhandle Eastern from the sale of a new preferred stock to such a purchaser, and Columbia Oil will apply the monies thus raised to reduce the total of debentures<sup>48</sup> outstanding by at least the amount of \$10,- [fol. 10837] 000,000.<sup>49</sup>

4. "All officers and directors of Columbia Oil shall resign upon entry of the order (of the Federal Court approving the plan of divestiture) and the approval of the plan by the Securities and Exchange Commission to the

<sup>48</sup>This refers to debentures of Columbia Oil in the amount of \$21,000,000, all held by Columbia Gas.

<sup>49</sup>Upon such a reduction in the outstanding debentures, Columbia Gas will reduce the interest on the remainder to 3%. In addition, certain sinking fund adjustments with respect to the outstanding debentures will be made. Columbia Gas waives any right to acquire ownership of Panhandle Eastern securities owned by Columbia Oil in the event of any default on the outstanding debentures of Columbia Oil held by Columbia Gas.



extent required by law and be replaced by officers and directors not objectionable to the Department of Justice, such directors to own no stock or securities of Columbia Gas. Such directors shall not include anyone who is now, or ever has been, an officer, director or employee of Columbia Gas or any of its subsidiary companies.

It is provided that the representatives of Columbia Oil on the board of directors of Panhandle Eastern shall be directors of Columbia Oil, and it is provided further that "As early as practicable after the entry of the final order approving the plan, the directors of Panhandle Eastern, who now represent Columbia Oil shall resign and be succeeded by persons who shall have been elected as directors of Columbia Oil under this plan."<sup>50</sup>

5. Subject to the approval of the Securities and Exchange Commission, if required by law, Columbia Gas shall sell the stock and indebtedness of the Indiana Gas Distribution (sic) Corporation<sup>51</sup> and the Michigan Gas Transmission Corporation owned by it to Panhandle Eastern at any time within one year from the date of the entry of the order, if said company wishes to buy the same, for a price equal to the actual investment of Columbia Gas therein, provided, Panhandle Eastern also purchases at [fol. 10838] the same time the gas pipe line in Indiana belonging to the Ohio Fuel Gas Company for the price of \$355,191 this being calculated by Columbia Gas as the fair value thereof on the basis of a sale by it during the current year of part of this line to an independent company. However, if, during said year, Columbia Gas receives from other sources, not connected directly or indirectly with Columbia Gas, an offer satisfactory to it to purchase said stock and indebtedness, Columbia Gas will give Panhandle Eastern written notification of the proposed terms of sale and give Panhandle Eastern ninety days within which to meet such terms. If, during such

<sup>50</sup>For a period of five years from the date of the entry of the order approving the plan "no person shall be qualified to be elected and serve as a director of Columbia Oil who shall be objectionable to the Department of Justice.

<sup>51</sup>The reference is apparently to Indiana Gas Transmission Corporation. This company it will be recalled owns part of the lines extending eastward from the terminus of Panhandle Eastern's lines toward Detroit.

ninety-day period, Panhandle Eastern does not meet the terms of the said outside offer, then Columbia Gas shall be free to accept said offer.

"If, at the expiration of said year, no such sale shall have been made, Columbia Gas will stand ready to sell such stock and indebtedness of said companies on the same conditions as above, subject to the approval of the Securities and Exchange Commission, if required by law, to others. To effectuate such sale, a trustee shall be appointed by the court to sell such properties:

"Provided, that such trustee shall not, unless Columbia Gas consents, accept any bid for such properties at a price amounting to less than its actual investment therein and provided, further, that such property shall not be sold to any purchaser who is in any way connected or interested, directly or indirectly, with or in Columbia Gas."

Columbia Oil, Gano Dunn and others who have testified on the question have attempted to explain Columbia Oil's reluctance to permit the refunding of the Class A preferred stock on the ground of the pendency of this plan of divestiture.

Soon after its filing, a stockholders' suit, known as the Young suit, was brought against the Columbia companies on the theory that effectuating the plan would be unfair to Columbia Gas. An injunction was sought in that suit against consummation of the plan. It was the position of Columbia Oil counsel that the Young suit delayed consideration of the plan, and hence delayed steps by Columbia Oil in the refinancing of the preferred stock. In order to show that the Moka interests were aiding in the conduct of the Young suit, counsel for Columbia Oil attempted to elicit testimony from W. G. Magnire, President of Moka and a Director of Panhandle Eastern, relating to conferences and other negotiations between himself and the plaintiff in the Young suit.

Our trial examiner, upon objection, rejected the proffer and refused to permit the line of questioning. The proffered evidence does not tend in any way to dispute the fact that Columbia Oil exercised its influence to prevent the refinancing of the Panhandle Eastern preferred.

But Columbia Oil's action in this respect is important and [fol. 10839] has been cited only because it is a significant illustration of Columbia Oil's power over Panhandle Eastern; the reason for Columbia Oil's exercise of its influence in this transaction is not material here.

The plan of divestiture was approved by the Federal Court on January 18, 1941, in *United States vs. Columbia Gas & Electric Corporation, et al.*, 36 F. Supp. 488. The government requested as a condition of approval of the plan that certain of the holders of common stock of both Columbia Gas and Columbia Oil dispose of their holdings in Columbia Oil. Among these was Philip G. Gossler who, excluding the United Corporation, is the largest single holder of Columbia Oil common stock and is a substantial holder of Columbia Gas common and chairman of the Columbia Gas board. It was also requested that the other officers and directors of Columbia Gas divest themselves of their holdings in Columbia Oil. The court granted both requests and its approval of the plan was conditioned upon the disposition to disinterested persons of the Columbia Oil holdings of Gossler and the other officers and directors of Columbia Gas. By the terms of the plan its consummation is also subject to our approval "if required by law."

It is urged that the pendency of this plan should be taken into consideration "as an element in favor of granting the applications of Columbia Gas with respect to Columbia Oil and Panhandle Eastern." There is cited to us as a "precedent" to be followed the *International Paper & Power Company case*, 4 S. E. C. 873 (1939).

The difference between the instant case and the *Paper & Power case* is material. In the *Paper & Power case* effective steps were taken, prior to the granting of the application, to deposit the shares of statutory subsidiaries with three liquidating trustees who were to proceed immediately with the liquidation. In this case the situation remains unchanged until certain conditions are satisfied. These involve the disposition of personal holdings of individuals interested in the Columbia companies. No machinery has been set in motion for such a disposition, and we have received no guarantees or assurances as to when such a disposition will take place. In the *Paper & Power case* the

entire plan of liquidation was put before us as a plan pursuant to Section 11 (e) of the Act. That Section provides that the Commission may, upon request of a company filing a plan, apply to a court to enforce and carry out its terms and the court may appoint a trustee for that purpose. In the Paper & Power case the plan contained a request to the Commission to seek the aid of a court if the liquidating trustees were unable to dispose of the assets of the trust estate. It included also a provision depriving the beneficiaries of any right to control the disposition of the trust estate upon such an application by the Commission. These factors were specifically relied upon by us in our order disposing of that case.

Comparable factors do not exist here. For an indeterminate period following our disposition, the relationship of the companies involved will remain unaltered. We cannot, therefore, accept the pendency of the plan of divestiture as a determinant factor in favor of granting the applications herein filed.

#### [fol. 10840] Conclusions

The applicants have asked for orders declaring certain companies to be outside the scope of a statute designed to prevent the recurrence of evils which in the past have occurred in the public utility holding company—subsidiary relationship. Not only their status as applicants, but the fact that they seek exemption from the automatic operations of the definition of the term "subsidiary" in Section 2 (a) (8), and the fact that such exemption would relieve companies from the operation of remedial legislation, places upon the applicants the burden of proving the non-existence of control, controlling influence, or intermediacy in the control relationship.<sup>52</sup>

We cannot find that the applicants have demonstrated that Columbia Oil and Panhandle Eastern are not controlled by Columbia Gas, or that their management or poli-

<sup>52</sup>Detroit Edison Company vs. Securities and Exchange Commission, (C. C. A. 6th, decided May 12, 1941); Securities and Exchange Commission vs. Sunbeam Gold Mines Company, 95 F. (2d) 699 (C. C. A. 9th, 1938); Piedmont & Northern Railway vs. Interstate Commerce Commission, 286 U. S. 299, 76 L. Ed. 1115 (1932); Schlemmer vs. Buffalo, etc., 205 U. S. 1, 51 L. Ed. 681 (1907); Grand Trunk Railway vs. United States, 229 Fed. 116 (C. C. A. 7th, 1916).

cies are not subject to a controlling influence by Columbia Gas within the meaning of Section 2 (a) (8) of the Act. Nor can we find that Panhandle Eastern is not controlled by Columbia Oil, or that its management or policies are not subject to a controlling influence by Columbia Oil within the meaning of such section. On the contrary, we are of the opinion that such controlling influences have been shown to exist as to make it necessary and appropriate in the public interest and for the protection of investors and consumers that both Panhandle Eastern and Columbia Oil, in respect of Columbia Gas, and that Panhandle Eastern in respect of Columbia Oil, be subject to the obligations, duties, and liabilities imposed in the Act upon subsidiary companies of registered holding companies. Cf. *Detroit Edison Company vs. Securities and Exchange Commission*, (C. C. A. 6th, decided May 12, 1941); *Rochester Telephone Corporation vs. United States*, 307 U. S. 125 (1939); *American Gas and Electric Company*, 9 S. E. C. .... (1941), Holding Company Act Release No. 2749; *H. M. Bylesby & Company*, 6 S. E. C. 639 (1940); *The Hartford Gas Company*, 8 S. E. C. .... (1941), Holding Company Act Release No. 2613.

However, we do find that Panhandle Eastern has demonstrated that it is not now controlled, directly or indirectly, by Mokon (either alone or pursuant to an arrangement or understanding with one or more other persons) either through one or more intermediary persons or by any means or device whatsoever; that it is not an intermediary company through which such control of another company is exercised; and that its management and policies are not subject to a controlling influence, directly or indirectly, by Mokon (either alone or pursuant to an arrangement or understanding with one or more other persons) so as to make [fol. 10841] it necessary or appropriate in the public interest or for the protection of investors or consumers that Panhandle Eastern, in respect of Mokon, be subject to the obligations, duties, and liabilities imposed in the Act upon subsidiary companies of holding companies.

An appropriate order will issue conditionally granting the application with respect to the relationship between Panhandle Eastern and Mokon, and in all other respects denying the applications under Section 2 (a) (8).



By the Commission (Chairman Eicher, Commissioners Healy, Henderson, and Pike).

FRANCIS P. BRASSOR,  
Secretary.

[fol. 10842] United States of America.

Before The Securities and Exchange Commission.

At a regular session of the Securities and Exchange Commission, held at its office in the City of Washington, D. C., on the 27th day of May, A. D., 1941.

Order Denying Applications In Part and Granting Applications In Part.

In the Matters of

Panhandle Eastern Pipe Line Company,

File Nos. 31-109, 31-493, 31-108.

Columbia Oil & Gasoline Corporation,

File Nos. 31-197, 31-106.

Columbia Gas & Electric Corporation,

File Nos. 31-422, 31-423.

Public Utility Holding Company Act of 1935—  
Section 2 (a) (8)

Panhandle Eastern Pipe Line Company having applied under Section 2.(a) (8) of the Public Utility Holding Company Act of 1935 for an order declaring it not to be a subsidiary of Columbia Gas & Electric Corporation, Columbia Oil & Gasoline Corporation or Missouri-Kansas Pipe Line Company; Columbia Gas & Electric Corporation having applied under the same section for an order declaring that neither Columbia Oil & Gasoline Corporation nor Panhandle Eastern Pipe Line Company is its subsidiary; and Columbia Oil & Gasoline Corporation having applied for an order under the same section declaring it not to be a subsidiary of Columbia Gas & Electric Corporation, and a hearing on said applications having been duly held; briefs having been filed and oral argument heard; and the Commission having this day issued its Findings and Opinion;

It Is Ordered that the said applications, except for the application of Panhandle Eastern Pipe Line Company re-



questing an order declaring it not to be a subsidiary of the Missouri-Kansas Pipe Line Company, be, and the same hereby are, denied; and that the application of Panhandle Eastern Pipe Line Company for an order declaring it not to be a subsidiary of the Missouri-Kansas Pipe Line Company, be, and it hereby is, granted, upon condition, however, that if at any time it appears to the Commission that [fol: 10843] the material facts and circumstances stated in its Findings and Opinion herein are changed, the Commission may reopen these proceedings and, in that event, if after notice and opportunity for further hearing, Missouri-Kansas Pipe Line Company, or Panhandle Eastern Pipe Line Company, shall fail to sustain the burden of proving that Panhandle Eastern Pipe Line Company is not controlled, ~~by~~ intermediary through which control is exercised, or subject to a controlling influence by Missouri-Kansas Pipe Line Company within the meaning of Section 2 (a) (8) of the Public Utility Holding Company Act of 1935, so much of this order as grants the application of Panhandle Eastern Pipe Line Company to be declared not to be a subsidiary of Missouri-Kansas Pipe Line Company may be revoked.

By the Commission.

(Seal)

FRANCIS P. BRASSOR,

Secretary.

[fol. 10844] For Immediate Release Saturday, June 21,  
1941.

Securities and Exchange Commission,  
Washington.

Holding Company Act

Release No. 2834

United States of America.

Before The Securities and Exchange Commission.

At a regular session of the Securities and Exchange Commission held at its office in the City of Washington, D. C., on the 21st day of June, A. D., 1941.

# Supplemental Order Amending Findings and Opinion.

In the Matters of

Panhandle Eastern Pipe Line Company,  
File Nos. 31-109, 31-493, 31-108.

Columbia Oil & Gasoline Corporation,  
File Nos. 31-107, 31-106.

Columbia Gas & Electric Corporation,  
File Nos. 31-422, 31-423.

Public Utility Holding Company Act of 1935—  
Section 2 (a) (8)

It appearing to the Commission after further consideration that certain portions of its findings and opinion issued herein on May 27, 1941 (Holding Company Act Release No. 2778), which findings are attached to the Commission's Order of the same date, should be amended;

It Is Ordered that there be substituted for the figure "\$4,945,500," in line 5 of that part of footnote 8 which appears on page 6 of the said Release, the figure "\$5,495,000," and that there be deleted from line 6 of the said portion of footnote 8 the words "that amount in"; and

That there be deleted the words "and Vice-President" from line 11 of page 7 of the said Release; and

That there be deleted from lines 1 and 2 of footnote 12, appearing at page 8 of the said Release, the words "in heavy default on its notes and," and that there be further deleted from the said footnote the entire last sentence thereof; and

That there be substituted for the words "Columbia Oil" appearing in the second line of paragraph 3 of footnote 14 at page 10 of the said Release, the words "Columbia Gas"; and

That there be deleted from line 18 of page 11 of the said Release, in reference to R. H. Delafield, the words "Director and"; and

[fol. 10845] That there be deleted from lines 2 and 3 of footnote 24, appearing at page 15 of the said Release, the

words "western Illinois border and extended to the Illinois-Indiana border," and substituted therefor the words "Illinois-Indiana border and extended eastward to a point near Muncie, Indiana"; and

That there be deleted from line 13 of the text, at page 21 of the said Release, the words "Columbia Gas" and substituted therefor the words "Columbia Oil"; and

That there be deleted the word "(sic)" and the designation of a footnote <sup>51</sup> from line 25 of page 30 of the said Release; and

That there be deleted the footnote designated as footnote <sup>51</sup> which appears on page 30 of the said Release; and

That the footnote designated as footnote <sup>52</sup> which appears at page 33 of the said Release be designated as footnote <sup>51</sup>.

By the Commission.

(Seal)

FRANCIS P. BRASSOR,  
Secretary.

[fol. 10848]

Exhibit 17

Schedule 1

Panhandle Eastern Pipe Line Company System  
Compressor Stations

Line Number	Name (A)	Year Constructed (B)	Present Horsepower (C)
1	Sneed	1936	5 200
2	Hansford	1940	3 900
3	Liberal	1930	10 000
4	Haven	1936	7 800
5	Greensburg	1936	7 800
6	Olpe	1936	7 800
7	Louisburg	1930	7 000
8	Houstonia	1936	6 500
9	Centralia	1936	6 500
10	Pleasant Hill	1936	6 500
11	Glenarm	1931	6 000
12	Tuscola	1937	5 100

(fol. 10849)

## Exhibit 17.

Schedule 2  
Page 1

List Of Communities Receiving Service Directly Or Indirectly From Panhandle Eastern Pipe Line Company Including Population And Number Of Customers As Of June 30, 1941

Line No.	Customer (A)	Ownership (B)	Community Served (C)	Approximate Population (D)	Estimated Number of Customers (E)	Date of First Delivery (F)
1	Panhandle Eastern Pipe Line Company					
2	State of Texas —					
3	Panhandle Power and Light Company	Continental Gas & Electric Corporation	Gruver	350	76	3/17/31
4	State of Kansas —					
5	The American Gas Company	Independent	Hartford	516	82	5/27/31
			Waverly	593	43	5/ 6/31
			Williamsburg	367	92	5/13/31
				1 476	217	
6	Argus Natural Gas Company, Inc.	Northern Natural Gas Company	Garden City	6 282	1 238	6/ 1/30
			14 Communities	18 238	4 060	6/ 1/30
				24 520	5 298	
7	Central Distributing Company	Independent	16 Communities	6 569	1 366	Various
8	Gas Service Company	Cities Service Company	Osawatomie	4 440 )		9/22/28
			Paola	3 763 )	2 319	9/ -/28
			Paola Rurals	75 )		9/ -/28
			Rantoul	224 )		9/ -/28
				8 502	2 319	
9	Kansas Gas and Fuel Company	Independent	Kincaid	400		8/26/31
			Mildred	146		8/26/31
				548	100	
10	Louisburg Gas Company	Independent	Louisburg	616	192	7/30/28
11	State of Missouri —					
12	Bowling Green Gas Company	Independent	Bowling Green	18 53	397	5/14/31
13	Central Distributing Company	Independent	13 Communities	15 477	3 104	Various
14	Central West Utility Company	Stern Bros. and Company	Liberty	3 588 )		1/ 3/36
			Smithville	771 )	1 439	1/ 3/36
			Rural	3 700 )		1/ 3/36
				8 059	1 439	
15	Citizens Gas Company of Hannibal	Interstate Gas and Electric Company	Hannibal	19 863	4 003	9/25/31

[fol. 10850]

## Exhibit 17.

Schedule 2  
Page 2List Of Communities Receiving Service Directly Or Indirectly From Panhandle Eastern Pipe Line Company Including Population And Number Of Customers As Of June 30, 1941  
(Continued)

Line No.	Customer (A)	Ownership (B)	Community Served (C)	Approximate Population (D)	Estimated Number of Customers (E)	Date of First Delivery (F)
1	State of Missouri — (Cont.)					
2	City of Fulton	City of Fulton	Fulton	6 103	640	5/13/36
3	Cities Service Gas Company	Cities Service Company	Kansas City	(Portion Indeterminable)		9/22/28
4	Interstate Gas Company	Independent	Harrisonville	2 306	458	1/ 2/34
5	Lee's Summit Gas Company	Independent	Lee Summit	2 254	473	1/ 7/31
6	Missouri Edison Company	Indland Power & Light Corporation	Louisiana	4 657	826	8/31/31
7	Missouri Power and Light Company	North American Light and Power Co.	Boonville	6 433 )		6/10/31
			Centralia	2 009		7/14/31
			Excelsior Springs	4 891 )		1/ 4/36
			Farber	385		5/19/31
			Hallsville	232 )		5/27/31
			Jefferson City	24 233 )		5/20/31
			Ladsonia	587 )		5/19/31
			Martinsburg	422 )	11 681	3/28/32
			Mexico	8 290 )		10/10/32
			Moberly	12 897 )		9/11/35
			New Franklin	1 210 )		5/ 7/31
			New London	1 001 )		11/ 3/31
			Sturgeon	571 )		5/26/31
			Vandalia	2 450 )		2/ 8/32
			Wellsville	1 310 )		3/ 1/32
				66 921	11 681	
8	Missouri Utilities Company	Community Power and Light Company	Columbia	18 339	3 677	7/23/32
9	State of Indiana —					
10	Kentucky Natural Gas Corporation	Independent		Indeterminable		9/ 1/38
11	Michigan Gas Transmission Corporation	Columbia Gas and Electric Corporation	70 Communities	467 794	97 545	Various
12	State of Michigan —					
13	Michigan Consolidated Gas Company	American Light and Traction Company	Ann Arbor	43 000	8 761	8/17/39
			Detroit	1 900 000	442 017	7/ 9/36
				1 943 000	450 778	



[fol. 10851]

## Exhibit 17.

Schedule 2

Page 3

List Of Communities Receiving Service Directly Or Indirectly From Panhandle Eastern Pipe Line Company Including Population And Number Of Customers As Of June 30, 1941  
(Continued)

Line No.	Customer (A)	Ownership (B)	Community Served (C)	Approximate Population (D)	Estimated Number of Customers (E)	Date of First Delivery (F)
1	State of Michigan — (Cont.).					
2	National Utilities Co., of Michigan	National Gas and Electric Corporation	Monroe Dundee Carlton Maybee	18 478 ) 1 699 ) 864 ) 390 )	3 700	5/19/41
				21 431	3 700	
3	State of Ohio —					
4	Central States Natural Gas Company	Independent	Paulding	1 903	280	7/5/39
5	Ohio Gas Light and Coke Company	Great Lakes Utilities Company	Archbold Bryan Delta Edgerton Montpelier Napoleon Pettisville Stryker Wauseon	1 186 4 670 1 777 982 3 667 4 539 307 817 2 880	334 ) 1 237 ) 230 ) 116 ) 776 ) 802 ) 60 ) 201 ) 606 )	6/12/39
				20 825	4 362	
6	The Toledo Edison Company	The Toledo Light and Power Company	Defiance	8 768	1 378	4/11/40
7	Illinois Natural Gas Company					
8	State of Illinois —					
9	Central Illinois Electric and Gas Co.	Consolidated Electric and Gas Company	Lincoln	12 443	1 683	9/7/34
10	Central Illinois Light Company	The Commonwealth and Southern Corporation	Bartonville ) Creve Coeur ) Peoria ) E. Peoria ) Washington ) Pekin ) Springfield )	) 105 003 ) ) ) 2 456 ) 13 324 ) 75 393 )	54 473	4/18/41 2/29/32 1/16/32
				196 176	54 473	



List Of Communities Receiving Service Directly Or Indirectly From Panhandle Eastern Pipe Line Company Including Population And Number Of Customers As Of June 30, 1941  
(Continued)

Line No.	Customer (A)	Ownership (B)	Community Served (C)	Approximate Population (D)	Estimated Number of Customers (E)	Date of First Delivery (F)
1	State of Illinois—(Cont.)					
2	Central Illinois Public Service Company	Middle West Corporation	Canton	11 583 )		
			Cuba	1 484 )		
			Havana	3 614 )	4 992	1/ 3/34
			Lewiston	2 358 )		
			Macomb	6 714 )		
			Hoopeston	5 613 )	925	12/ 1/33
			Quincy	40 521 )	8 750	5/15/32
			Owaneco	325 )		
			Pana	6 000 )		
			Shelbyville	3 568 )	2 900	7/20/32
			Taylorville	7 316 )		
			Tower Hill	642 )		
				89 738	17 567	
3	Citizens Gas Company	Independent	Arthur	1 600	200	6/ 2/41
			Atwood	883	80	6/ 9/41
			Chrisman	1 100	118	11/23/38
			Newman	1 075	121	10/ 6/39
			Tuscola	2 600	372	11/12/38
			Villa Grove	2 001	208	8/ 1/40
				9 259	1 099	
4	City of Pittsfield	City of Pittsfield	Pittsfield	3 854	398	7/ 6/38
5	City of Roodhouse	City of Roodhouse	Roodhouse	2 928	305	6/ 2/38
6	City of White Hall	City of White Hall	White Hall	2 954	276	9/ 7/38
7	Illinois Iowa Power Company	North American Light and Power Co.	Champaign	25 000 )	9 823	1/18/32
			Urbana	13 060 )		
			Danville	36 865 )	7 659	2/24/32
			Decatur	59 129 )	13 469	4/ 5/32
			Jacksonville	17 747 )	3 355	1/ 2/32
				151 801	34 306	
8	Village of Morton	Village of Morton	Morton	2 241	175	1/21/41
9	Totals			3 123 526	704 591	

[fol. 10853]

## Schedule 3

Page 1

List Of Industrial Customers Receiving Service Direct  
From Panhandle Eastern Pipe Line Company System  
June 30, 1941

Line No.	Customer (A)	Gas Used For (B)	Date of First Service (C)
1	<u>Panhandle Eastern Pipe Line Company</u>		
2	Edwards-Conley Brick and Tile Company Columbia, Missouri	Manufacture of Ceramics	5/14/31
3	Fayette Brick and Tile Company Fayette, Missouri	Manufacture of Ceramics	5/28/31
4	Freiling Greenhouses Hannibal, Missouri	Heating of Greenhouses	11/28/33
5	Harbison-Walker Refractories Company Pittsburgh, Penn.	Manufacture of Ceramics at: Fulton, Mo. Vandalia, Mo.	12/28/31
6	Mexico Refractories Company Mexico, Missouri	Manufacture of Ceramics	9/ 6/31
7	Missouri Power and Light Company Jefferson City, Missouri	Fuel for Boilers in Power Plants at Jefferson City, Mo. Boonville, Mo. Mexico, Mo. Moberly, Mo.	10/18/31
8	Phillips Petroleum Company Bartlesville, Oklahoma	Fuel for Pumping Stations at: Harrisonville, Mo. Jefferson City, Mo. Leeton, Mo. Paola, Kans. Sharpe, Kans.	11/13/35
9	W. J. Small Co., Inc. Neodesha, Kansas	Manufacture of Dehydrated Alfalfa meal at: Liberty, Mo. Boonville, Mo.	4/26/40 5/ 2/41
10	State of Kansas Topeka, Kansas	Fuel at: State Hospital, Osawatomie, Kans.	4/30/40

List Of Industrial Customers Receiving Service Direct  
From Panhandle Eastern Pipe Line Company System

June 30, 1941

(Continued)

Line No.	Customer (A)	Gas Used For (B)	Date of First Service (C)
1	United Brick and Tile Company Kansas City, Missouri	Manufacture of Ceramics at: Vale, Missouri	7/14/31
2	Universal Atlas Cement Company New York, N. Y.	Manufacture of Cement at: Hannibal, Mo.	3/ 3/33
3	Walsh Refractories Corporation St. Louis, Missouri	Manufacture of Ceramics at: Farber, Mo.	12/29/31
4	Wellsville Fire Brick Company Chicago, Illinois	Manufacture of Ceramics at: Wellsville, Mo.	1/31/41
5	<u>Illinois Natural Gas Company</u>		
6	Black White Lime Company Quincy, Illinois	Manufacture of Lime	5/ 6/33
7	Marblehead Lime Company Chicago, Illinois	Manufacture of Lime at: Quincy, Ill. Manufacture of Lime and Rock Wool at: Marblehead, Ill.	5/27/35 12/14/38
8	Menneke Stone and Lime Company Quincy, Illinois	Manufacture of Lime	5/ 6/33

[fol. 10926]

(Exhibit 17.)

Schedule M

## Panhandle Eastern Pipe Line Company System Summary, Miles Of Pipe By Sizes June 30, 1941

Line No.	Location (A)	2" I.D. (B)	3" I.D. (C)	4" I.D. (D)	5" I.D. (E)	6" I.D. (F)	8" I.D. (G)	10" I.D. (H)	12" I.D. (I)	16" O.D. (J)	18" O.D. (K)	20" O.D. (L)	22" O.D. (M)	24" O.D. (N)	Total Miles (O)
1	Panhandle Eastern Pipe Line Company														
2	Main Line System														
3	Texas												55.91		55.91
4	Main Line			16.51		25.07	23.81	15.76	10.60	12.95	13.32	7.98	.02		126.02
5	Gathering Lines														2.83
6	Lateral Lines	2.83													
7	Oklahoma							5.05					38.38		43.43
8	Main Line														
9	Kansas							14.91			8.22		15.96	345.11	384.20
10	Main Line							.96			9.11			253.79	263.86
11	Loop Lines														257.52
12	Gathering Lines	3.44		68.00		30.15	26.86	21.86	22.47	59.62	25.12				65.48
13	Lateral Lines	26.71		7.41			31.26								
14	Missouri							8.24	.71	1.31			202.74		213.00
15	Main Line							.72	5.86		10.05		50.83	104.97	172.43
16	Loop Lines														266.77
17	Lateral Lines	24.36	20.16	37.80		62.03	84.95	14.85	22.62						
18	Illinois							3.45	1.27		19.65	58.72	123.03		206.12
19	Main Line							.37				23.80	47.13	29.42	100.72
20	Loop Lines						1.28								1.28
21	Lateral Lines														
22	Indiana											.04			.04
23	Main Line														
24	Totals Main Line System	57.34	20.16	129.72		117.25	168.26	86.17	63.53	73.88	85.47	90.54	534.00	733.29	2 159.61
25	Local Area														257.35
26	Kansas	94.53	1.86	51.21	20.75	47.26	19.28	22.46							110.13
27	Missouri	21.40	.32	26.66	7.26	18.13	16.20	20.16							
28	Totals Local Area	115.93	2.18	77.87	28.01	65.39	35.48	42.62							367.48
29	Total Panhandle Eastern Pipe Line Company	173.27	22.34	207.59	28.01	182.64	203.74	128.79	63.53	73.88	85.47	90.54	534.00	733.29	2 527.09
30	Illinois Natural Gas Company														261.14
31	Lateral Lines	16.79	24.18	34.34		38.43	10.86	36.59	31.50	68.20	.25				
32	Totals Illinois Natural Gas Company	16.79	24.18	34.34		38.43	10.86	36.59	31.50	68.20	.25				261.14
33	Totals Entire System	190.06	46.52	241.93	28.01	221.07	214.60	165.38	95.03	142.08	85.72	90.54	534.00	733.29	2 788.23

[fol. 10958] (Exhibit 30.)

Written Testimony of Witness Rufus M. Smith.

[fol. 10959] Statement of Qualifications and Experience of  
Rufus M. Smith.

1. Name, address, and age.

Rufus M. Smith, Kansas City, Missouri, age 38.

2. Present position:

Geologist, Panhandle Eastern Pipe Line Company.

3. Education:

May 1929—Graduated from Colorado School of Mines,  
with degree of Geological Engineer.

4. Business Experience:

1926 to 1927—Instrument man, scout and torsion balance  
assistant with Midwest Refining Company, Denver, Colo-  
rado.

1929 to 1930—Geologist, Gulf Production Company,  
Houston, Texas.

1930 to 1932—Engineer and Geologist for Panhandle  
Eastern Pipe Line Company.

1932 to 1934—Assistant construction superintendent,  
Phillips Petroleum Company, Kansas City, Missouri.

1934 to 1936—Agricultural Engineer, Department of  
Agriculture, headquartered at Kahoka, Missouri.

1936 to 1941—Geologist, Panhandle Eastern Pipe Line  
Company, Kansas City, Missouri.

[fol. 10960] 5. Duties:

My duties as geologist for Panhandle Eastern Pipe Line  
Company have required me at all times to keep in close  
touch with development and producing conditions in the  
areas in which Panhandle Eastern owns reserves; to watch  
the performance of the wells in these fields; and advise the  
management with respect to its producing operations.

[fol. 10961] Written Testimony of Rufus M. Smith.



I came with the Panhandle Eastern Pipe Line Company organization in April 1930 as a geologist, and have been well acquainted with the development operations of that company in the Texas and Hugoton Fields during the entire period of my connection with the company. I am familiar with its gas reserves, the condition and productivity of its wells and those belonging to other producers with whom it has gas purchase contracts, and with the formations underlying the acreage from which said company now takes gas. During my service, I have had occasion to continuously study the producing conditions in the areas from which the company obtains its gas supply.

In the testimony which follows, I shall deal primarily with the Panhandle Eastern gas reserves located in the State of Texas.

In my work, it has been necessary for me to keep in close touch with the developments in those portions of the field in which Panhandle Eastern Pipe Line Company has interests and, in a more general way, to keep advised concerning developments in other portions of the field. I have, from time to time, carefully studied the Annual Reports of the Railroad Commission of Texas, and these reports have materially assisted me in reaching the views which I now have with respect to conditions in that field.

#### Description of the Field:

It is recognized by geologists generally that the Panhandle oil and gas field overlies a part of a buried chain of granite mountain peaks which extends in a Southeasterly course through this field. It is believed by many that an extension of these mountains comes to the surface as the Wichita Mountains in Oklahoma, at an elevation of approximately 1,000 feet above sea level. The Panhandle oil and gas field extends in a Southeast-Northwest direction, [fol. 10962] cutting across portions of Collingsworth, Wheeler, Gray, Carson, Hutchinson, Potter and Moore Counties, into Hartley County, Texas. The field is approximately 125 miles in length and has an average width of approximately 20 miles. As classified by the Railroad Commission, 1,085,270 acres produce sweet gas and 372,437 acres produce sour gas. Sour gas is gas containing sulphur, and is not suitable for ordinary pipe line purposes.



unless the sulphur content is removed. The Texas Railroad Commission also recognizes as proven, or semi-proven, for oil an area of approximately 250,000 acres. Approximately 40% of the producing acreage is included in the gas producing areas referred to, due to the fact that above the oil are horizons from which free gas is produced. The oil production in the field is confined to a series of some 30 pools extending along the North flank of the field for a distance of about 90 miles.

#### Producing Formations:

Four formations or zones in the Panhandle Field are productive. These zones are: (1) Brown dolomite, (2) gray dolomite, (3) gray lime, (4) granite wash. The granite wash formation is an eroded and disintegrated granite accumulation which formed along the lower flanks or slopes of the granite ridge. The lime and dolomite are marine sedimentary formations which were deposited on the sides and over the axis of the granite ridge in later geologic times.

#### Development:

In 1918, while the area was being explored for oil, gas was discovered in Northern Potter County. Following the completion of the discovery well, several other wells were drilled into the gas pay but oil was not discovered until 1921 when the Burnett well, drilled by Gulf Production Company was completed in Northern Carson County with an initial daily production of approximately 200 barrels. Development of the field was rather slow and the total [vol. 10963] daily oil production in the entire field at the end of 1925 was not more than 5,500 barrels.

In the early part of 1926, the Borger oil pool in Hutchinson County was discovered and immediately thereafter an intensive drilling program was carried on. Within a few years, drilling operations progressed to such an extent as to enable those studying the field to reach a reasonable conclusion as to the probable extent of the field. Oil pools were discovered in Moore, Hutchinson, Carson, Gray and Wheeler Counties and, as a result of the drilling

of other wells in a search for oil, substantial portions of the area now known as the Panhandle Field were found to contain no oil but to contain large volumes of gas.

Many oil wells located in various portions of the field were drilled through several gas containing strata before entering the oil horizon and, in many instances, the wells were completed in such a manner that gas from the gas strata was produced along with the oil from the lower oil strata. As a result, a quantity estimated by the Texas Railroad Commission to be in excess of two trillion cubic feet of gas, most of which came from the free gas strata above the oil, was produced with the oil and wasted into the air.

#### Panhandle Eastern Activities:

Panhandle Eastern Pipe Line Company entered the Panhandle oil and gas field by purchasing acreage in February 1930. The purchases were made through the activities of its then wholly owned subsidiary (later dissolved) corporation, Texas-Interstate Pipe Line Company. In further testimony given by me, the two will be treated as the Panhandle Eastern project.

When Panhandle Eastern commenced to assemble its acreage reserves in the Panhandle Field, the general extent of the field was fairly well known, but the information obtained by the drilling theretofore done was not adequate to justify definite conclusions with respect to the producing possibilities of the various portions of the field. At that time, other companies who desired to produce gas from the Panhandle Field were also seeking reserves in that field and it was impossible definitely to determine the areas in which Panhandle Eastern would build up the backbone of its gas reserves. It was necessary, therefore, that leases be purchased in various portions of the field in the general area from which Panhandle Eastern expected to market gas.

#### 1932 Acreage:

Exhibit 19 is a map prepared under my direction from the records of the company, showing in red color the acreage on which Panhandle Eastern Pipe Line Company had leases as of March 31, 1932. Certain tracts are shown

on this map as belonging to Panhandle Eastern which are no longer a part of its reserves. Some of these tracts were, by later developments, found to be outside the producing area; some were found to be located in sour gas territory; some located in areas which later were subjected to excessive drainage; and some were found to be in areas of small open flow capacities. Most of the leases, however, which were acquired at the inception of the project, were, by later development by Panhandle Eastern as well as by drilling operations of other owners of oil and gas leases, proven to be located in choice gas producing areas, and constituted the nucleus for the company's present Texas gas reserve.

#### Building Reserves:

This method of building a reserve in a new field is not an unusual one. A purchaser of leases in an undeveloped area knows that the choice locations can only be determined after a considerable development is carried on that some of the leases may later be found to be of little or no value to it. Therefore, when selecting and purchasing leases the policy of checkerboarding, or purchasing in several apparently favorable spots, is frequently followed with a view of later selecting the tracts which will be retained, consolidating positions in the area found most prolific, and disposing of those leases which are not believed to be of sufficient economic value to justify drilling by the particular company which has made the investment. Such disposition is accomplished by selling or exchanging the less desirable leases or, if no other disposition can be made, by surrendering such leases and thus obtaining relief from the burdens of delay rentals, taxes and other carrying charges.

It is often the case that a lease which, because of its location, is of little economic value to one company will be of great value to another, and that exchanges of leases can be effected to the advantage of both exchanging parties. It also is frequently possible to arrange with lessors where tracts are small to effect consolidations of separate leases into an agreement covering at least a section, which is considered an economic drilling unit in this area. This enables the lessee to save substantial drilling and producing expense without in the least dam-

aging the value of either consolidated lease as a gas reserve, and such consolidations are also to the advantage of the respective lessors.

Thus, by consolidating acreage and positions and by a culling process, a company, after selecting general areas, can improve its position in selected areas and round out its reserves so as to have a more favorable position than would be the case if its reserve were represented by only the separate leases as originally acquired.

#### Panhandle Eastern's Original Policy:

In assembling its original leases, Panhandle Eastern made its principal purchases in Moore County and in Northwestern Carson and Northeastern Potter Counties and constructed its gathering lines to serve that general area. It was at that time known that the area was one of high gas content, but the boundaries of the field had not been determined, the exact location of the boundary line [fol. 10966] between the sour gas and the sweet gas areas had not been established, and the best producing portions of the general area could not, with exactness, be located. In acquiring its leases in that area, Panhandle Eastern spread its purchases over the selected area to the best of its ability under existing conditions so as to be certain that it would have good producing properties when, as a result of further development in the general area, the locations of the best producing portions could be determined.

#### The Company's Development Policy:

\* During the years which have passed since the company first commenced taking gas from the field, it has kept in close touch with conditions in the field, and when selecting the acreage which it desired to retain as a part of its reserves, has applied the information thereby acquired. It has been my duty, as an employee of the company, during all this period to keep informed concerning developments in the area and to communicate that information to the management.

In the process of culling, the company has exchanged some leases, sold others, and released some which were thought not to fit into its program. Many additional leases also have been acquired. Lease consolidations

either with other old leases or with acreage more recently acquired have been effected. Substantial portions of the reserves now held by the company are held on renewal and consolidation agreements, rather than under the terms of the original leases. The presently owned reserves of Panhandle Eastern, on which are now 57 producing wells, are principally located in the areas first selected in 1930—in Southern Moore County, Northwestern Carson County and Northeastern Potter County.

#### Gas Purchase Contracts:

In addition to its owned leases, Panhandle Eastern holds gas purchase contracts covering the production from other wells located in the same general areas as its [fol. 10967] own. These contracts, except one with Northern Natural Gas Company, covering production from two wells, run for the lives of the leases covered. Since they are located in the same areas as its own producing properties, the company can construct and operate its gathering lines more economically than if the wells served were in different parts of the field. There are now 53 producing wells on leases covered by such gas purchase contracts.

#### 1941 Acreage Map:

Exhibit 20 is a map prepared under my supervision, showing in colors on the lower section the tracts which constitute the present reserves (owned and held by gas purchase contracts) of Panhandle Eastern in the Panhandle Field. The tracts constituting such reserves are shown on said map in three classifications:

- (a) those marked in pink are tracts which the company owns both oil and gas rights;
- (b) those shown in pink with yellow border being those on which it owns gas rights only; and
- (c) those shown in green being those tracts on which it holds gas purchase contracts.

The locations of Panhandle Eastern's wells and the wells of other producers with whom it holds gas purchase contracts are shown on the Exhibit.

#### The Panhandle Structure:

Exhibit 21 is a map, prepared under my direction, showing the structure of the west portion of the Panhandle

Field as that structure is recognized generally by geologists. The contours shown thereon are based on elevations above sea level of the top of what is locally known as the "Panhandle Lime." This structure map shows that the properties, in the general area in which Panhandle Eastern's reserves are located, are favorably located for the production of gas.

[fol. 10968] The line marked "A-A'", shown on this structure map, is the approximate location of the cross-section portrayed on the cross-section map next referred to.

#### Typical Cross Section:

Exhibit 22 was prepared by me for the purpose of illustrating the geologic formation existing in the general area in which Panhandle Eastern's Texas reserves are located. It represents the typical condition existing on a line extending from North Central Potter County to Northwest Hutchinson County along the general course indicated by line A-A', shown on Exhibit 21. The portions marked in red illustrate typical areas in which gas is found. The portions marked in green represent typical areas in which oil is found and the portion marked in blue represents typical areas in which water is found.

The "granite wash" was first formed as accumulations of disintegrated granite, washed down along the slopes and into the valleys near the mountains. This disintegrated granite is usually very porous and permeable. Subsequently the dolomite and lime formations were laid down as marine sedimentary deposits over the peaks and extending out from the mountains. It is generally believed that the area was submerged and uplifted several different times, resulting in the interbedding of "granite wash" deposits with the lime and dolomite formations.

Beds of anhydrite and other impervious formations form a cap rock over the underlying porous and permeable formations represented by the granite wash, lime and dolomite.

It is generally believed by geologists that subsequent to the time these porous formations were laid down, oil and gas migrated into the area from source beds at some other point, possibly the Anadarko Basin. Thereupon,



the oil, gas and water assumed their natural positions with relation to each other, that is the water being the [fol. 10969] heaviest, at the bottom, then the oil and then the gas.

As clearly appears from Exhibit 22, the different producing formations are interconnected. This is true in practically all instances. Necessarily, therefore, production from any of the horizons shown has a direct effect on all other producing formations in the reservoir. It will also be noted that the same producing formation will at some points produce gas only; at other points gas and oil; at other points, gas, oil and water; at others oil and water; and at still others only water, depending on the elevation at which the particular formation is encountered in a particular well.

#### Formations Encountered In Drilling Wells:

The well shown on Exhibit 22 is intended to represent a typical well. It will be noted that after passing through the cap rock the well pierces several formations producing only gas; then one producing oil; and finally one bearing water only. Unless this water is controlled by plugging operations, the reservoir pressure will force it into the well bore and a mixture of oil and water will result. Upon depletion of the oil near the well bore, there is danger that the water will be forced into the producing formations which originally contained oil and thus seriously damage the oil producing ability of that formation. There is also a danger that water will also be forced into and damage some of the upper gas producing formations.

In the early history of the Panhandle Field, operators frequently adopted the practice of completing their wells without sealing off the free gas in the formations above the oil. In many instances this was done for the purpose of utilizing the gas as an aid in the recovery of the oil. In some instances, casings were split or the casing seats were damaged so as to permit the entry of gas from the gas bearing strata to assist in the recovery of the oil. As a result of such operations, tremendous volumes of gas, [fol. 10970] estimated by the Texas Railroad Commission at two trillion cubic feet, have been produced from oil wells and in most instances have been permitted to waste into the air.

In some areas of the field, oil is found, with no free gas encountered in the formations above the oil zone. This is especially true in certain areas north of Borger, Texas, where the amount of gas produced with the oil has been negligible.

Gas only is found in the greater part of the Panhandle field where the producing formations occur at the higher elevations. The Texas Railroad Commission has estimated that while the field, as a whole, covers approximately one and one-half million acres, the oil producing portion covers only approximately 250,000 acres of which approximately 40% contains free gas in formations above the oil.

#### Effect of Production:

It will be readily recognized, from an inspection of Exhibit 22 that production of gas at any point in the reservoir will result in gas moving toward the well bore from which the production is taken, and that such migration of gas will result in lowered pressures and less content in the areas from which the gas has migrated, since gas moves from an area of high pressure to one of lower pressure, as water runs down hill.

It will be noted that production of oil or gas is not limited to any particular zone in the line series, but may occur at any of the zones where the proper porosity and permeability exist.

#### Division of Panhandle Field:

As has been stated, the Panhandle field extends in length approximately 125 miles and has an average width of approximately 20 miles. The Railroad Commission has, for purposes of administration, divided the gas producing portions of the field into three zones, described as the East Field, the West Field and the Sour Field. At [fol. 10971] a point in the East part of Gray County, where a low pressure area and a structural restriction exist, the Commission has placed a dividing line between the East Field and the West Field. The East Field produces oil and sweet gas. Most of the gas produced in that field is marketed at points in Oklahoma, Kansas and North Texas. The gas producing section of the field lying West of this line is divided into two fields, one being

known as the West Gas Field and the other as the Sour Gas Field. The sour gas field is that portion of the Panhandle Field West of the West boundary line of the East field, from which gas with sulphur content is produced. Oil is produced from pools in each field. The West Gas Field is the area in which the properties of Panhandle Eastern Pipe Line Company are located and my studies have been largely confined to this field.

#### Reservoir Pressure:

The initial pressure of the Panhandle Gas Field was approximately 430 pounds per square inch at the well-head, corresponding to a pressure in the producing horizon of approximately 471 pounds per square inch. This pressure is subnormal when compared with reservoir pressures at similar depths found in most other fields. Many geologists attribute this subnormal pressure to an assumption that the pressure is the result of past or present interconnections with the formations outcropping in the Wichita Mountains in Oklahoma, which have an elevation of approximately 1,000 feet above the producing horizon in this field, and water entering the outcroppings there, and exerting pressure on formations at this elevation would produce a hydrostatic head, creating a pressure of approximately 471 pounds.

Continued production of oil and gas from this field has resulted in substantial reductions in pressure. The extent and effect of this pressure drop will be discussed in connection with a presentation of a series of rock pressure maps.

#### [fol. 10972] Rock Pressure Map 1932:

I have already pointed out that when the field was first discovered, the well head pressures were approximately 430 pounds per square inch. As a result of withdrawals prior to 1932, the pressures had commenced to drop materially in the areas along the North flank of the structure. Exhibit 23 has been prepared for the purpose of showing the pressure condition existing that year. The area colored yellow represents those portions of the field which still had pressures above 400 pounds. That band then covered the greater portion of the free gas producing area. Other colored bands shown on the map represent areas having pressures from 300 to 400 pounds, from 200 to 300 pounds

and below 200 pounds. It will be noted that the areas close to oil production were those affected most seriously by the pressure drops. This was due to the circumstance that most of the gas which had been theretofore taken from the field had been produced with the oil in the manner already pointed out. At that time very small quantities of gas had been taken from the West field by Natural Gas Pipe line companies.

#### Gas Pipe Lines:

By 1933, several lines had been constructed into the field for the purpose of transporting large volumes of gas out of the West sweet gas field to distant markets. Panhandle Eastern's line was completed in 1932. Lines were also constructed by Texoma Natural Gas Company and Natural Gas Pipeline Company of America for the purpose of furnishing gas to Chicago and other Northern markets, by Canadian River Gas Company and Colorado Interstate Pipe Line Company for the purpose of furnishing gas to Denver and other points, by Northern Natural Gas Company for the purpose of furnishing gas to Omaha, Minneapolis and other points by South Plain Pipe Line Company for the purpose of furnishing gas to points in the South plains of Texas, and by the Empire Companies for the purpose of furnishing gas to Kansas City and other points in Kansas and Missouri.

#### [fol. 10973] Rock Pressure Map 1938:

Exhibit 24 reflects the rock pressure pattern in the West Field in 1938, and it will be noted by comparing this map with Exhibit 23 that during the intervening six years substantial changes had come about as a result of withdrawals.

The map for 1938, as well as maps which will be presented by me illustrating the conditions existing in 1939, 1940 and, so far as known, 1941, are contoured on 50 pound pressure bands instead of 100 pound pressure bands, as was the case with the 1932 map. The 1932 map was prepared by me from one in our files, the source of which I do not now know. The maps for 1938, 1939 and 1940 are all taken from official rock pressure maps issued by the Railroad Commissioner of Texas and present the Commission's views as to the locations of the various pressure bands in the field. The incomplete map for 1941 is based on official

Railroad Commission tests which were incomplete at the time the map was made and it portrays only the Commission's tests of some of the wells from which Panhandle Eastern produces gas.

It is shown by the 1938 map that some portions of the field nearest the oil producing areas, had dropped to a pressure below 150 pounds; however still a small area in the field had pressures above 400 pounds. Most of the Panhandle Eastern properties and the wells of other producers from which it purchases gas are located in areas where pressures were then 350 to 400 pounds.

#### Rock Pressure Map 1939:

Exhibit 25 is a rock pressure map showing the pressure condition in the West Field in 1939. It will be noted that, as shown on that map, most of the properties constituting Panhandle Eastern's reserves are located in the areas where pressures were still from 350 to 400 pounds and that the yellow, or highest pressure area, is considerably reduced from that shown on the 1938 map.

#### [fol. 10974] Rock Pressure Map 1940:

Exhibit 26 reflects the pressure situation in the West Field which was found to exist as a result of the tests made by the Railroad Commission in 1940. A comparison of that map with the map for 1939 shows that the pressure band representing pressures of 300 to 350 pounds has extended at some points further into the area in which Panhandle Eastern's reserves are located, but the overall picture does not reflect a very great encroachment. This map shows that there had been a further reduction of the area containing pressures above 400 pounds and that all pressures were gradually being lowered to the West and South.

#### Sour Gas Line:

On Exhibit 26, in heavy dashed lines, is shown the generally recognized sour gas line as now recognized by the Railroad Commission. The wells drilled generally North of that line produce sour gas only, while gas wells drilled South of the line produce sweet gas. Because of the presence in the sour gas of sulphur compounds in appreciable amounts, it is not suitable for use for light, heat and fuel purposes unless first subjected to a processing.

for the removal of the sulphur. To date, it has not been found economically advisable by any producer taking gas from the field for ordinary pipe line purposes to process the sour gas. As a result, the sour gas is used only for the manufacture of carbon black. The Texas Legislature has, by statute, prohibited the use of sweet gas for that purpose but has expressly permitted the use of sour gas. Approximately 89% of the carbon black manufactured in the world is manufactured in the Panhandle of Texas. The demand for sour gas for the manufacture of carbon black has been such that the owners of gas producing properties in the sour gas area have been able to produce gas from that area in a much greater proportion to their reserves in place than those holding gas properties in the sweet gas areas could produce. Of necessity, the result of [fol. 10975] production of gas from the smaller sour gas area in a greater proportion than those holding gas reserves in the sweet gas area are able to produce and market their gas will result in continued drainage from the sweet gas area to the sour gas area.

#### Rock Pressure Map 1941:

Exhibit 27 is a rock pressure map showing the pressures existing in a portion of the wells in Panhandle Eastern's reserves, reflected by tests of the field now being taken. The portions of the reserves colored are only a portion of Panhandle Eastern's reserves, and lie principally within the pressure bands 300 to 350 pounds. Some of the other leases immediately adjoining that band and constituting a substantial part of Panhandle Eastern's reserves will be found to still lie within the 350 to 400 pound pressure bands when reports adequate to permit drawing of contour lines are available for completion of the rock pressure tests of 1941.

#### Sand Thickness and Porosity:

Numerous qualified geologists have reached the conclusion that the average "pay thickness" in the better portion of the gas producing area in the Panhandle field is approximately 70 feet and that the average porosity of such pay formations is approximately 20%. From these determinations, they have estimated the average content in that area to have been approximately 17.7 million cubic feet per acre. I concur in that conclusion.



### Exhibits 28 and 29:

Irrespective of what the average sand thickness and the average porosity of the field may be, it is unquestionably true that in different portions of the field great variations are found as to thickness of pay or percentage of porosity, or both such factors. This obvious situation is reflected in and evidenced by, the varying initial potential producing capacities of the wells heretofore drilled.

[fol. 10976] I have caused to be prepared two series of graphs which clearly demonstrate the variability in both pay thickness and porosity. These graphs are based on information obtained from a close study of the logs of 34 wells, all of which are located in the West Panhandle Field and in or near the areas where Panhandle Eastern's reserves have been selected. These two series of graphs are Exhibits 28 and 29.

### Wells Used for Graphs:

On Schedule 1 of Exhibit 20, I have shown the wells used as a basis for this study, their locations, the pay thicknesses as indicated from the well logs, and the initial open flows in millions of cubic feet. The well numbers shown on that schedule correspond to the figures appearing at the top of Exhibits 28 and 29 and to the right of the graphs shown thereon.

### Explanation of Graphs:

The vertical scale on these graphs represents the thickness of pay in feet, while the horizontal scale reflects the initial volume in millions of cubic feet. The dots shown on each graph indicate the thickness of pay plotted against the open flow volume at the time that amount of gas pay had been drilled. For example, it appears from Graph 1 that when 10 feet of gas pay had been drilled two million open flow volume had been obtained, but when 25 feet of pay had been drilled an aggregate of 6.5 million cubic feet had been obtained. Also, on Graph 2 when 35 feet of pay had been drilled an open flow volume of 17.5 million had been developed, when 51 feet of pay had been drilled, 25 million cubic feet of potential had been developed, and when 76 feet of pay had been drilled an aggregate of 123.4 million cubic feet potential had been developed.

These graphs clearly demonstrate that the productivity of the wells does not always increase in the same proportions as the increases in aggregate pay thickness, which necessarily means that in the different pays encountered varying percentages of porosity exist.

[fol. 10977] Productivity Map:

That portion of Exhibit 31, which represents the West Panhandle Field, was prepared for the purpose of showing the varied productivity existing in the Panhandle Field, as reflected by the varying initial potentials at virgin pressure. The legend shows the classification of the productivity bands. This map has been, under my direction, made from one compiled several years ago by C. Don Hughes, a geologist of Amarillo, Texas, who has been familiar with the Panhandle Field since development first began. A few slight changes have been made by me, as a result of information not available at the time the Hughes map was prepared.

It will be noted that this productivity map shows that most of the properties in the area where Panhandle Eastern's reserves are located are in the bands of high productivity.

Gas Content in Panhandle Eastern's Reserves:

I have made a study with respect to the reserves originally contained in the Texas acreage on which Panhandle Eastern holds gas leases and the reserves in the Texas acreage covered by gas purchase contracts belonging to that company.

It is recognized by geologists generally that, based on an average sand thickness of 70 feet and an average porosity of 20%, the average original content in the better portion of the field was approximately 17.7 million cubic feet per acre at virgin pressure. It is also recognized generally by geologists that the average original content in the poorer class of acreage (in which I include wells having less than 5 million cubic feet potential open flow at virgin pressure) was approximately 5 million per acre.

One of the earliest complete studies of the field was that by Cottner & Crum in the spring of 1932, based on the best data then available. They at that time estimated that for acreage having initial open flow capacities of 10

[fol. 10978] million cubic feet or more, the average thickness of pay was 65 feet and the average porosity was 20% resulting in an average content of 15.289 million cubic feet per acre. They then estimated a content of 6 million cubic feet for the additional poorer class of acreage. Since their study was made, the size of the recognized field has been somewhat increased so as to take in additional acreage, additional data has indicated that thicker pay exists than had been originally assumed, and further developments have caused most geologists to believe that the average pay thickness in the better areas of the field is at least 70 feet. As pointed out in connection with my discussion of Exhibits 28 and 29, it is also now clearly proven that the producing formations in the field vary greatly in percentage of porosity.

In making my study, I thought it reasonable to use an original content of 17.7 million cubic feet per acre for the better class of acreage (which I classify as Class I) and a content of 5 million cubic feet per acre for the acreage with initial open flows at virgin pressure of 5 million feet or less (which I classify as Class II).

After adopting these figures (which I think are conservative), I have classified the acreage in the Panhandle field held by Panhandle Eastern under owned leases and the acreage on which it holds gas purchase contracts, so as to determine the amount of acreage included within its reserves having original open flow capacities at virgin pressure of 5 million cubic feet daily and above and the acreage having initial potentials at virgin pressure below 5 million cubic feet. After applying to these classes the original per acre content which I thought appropriate, I reached the conclusion that the original gas content in the 65,429 acres constituting Panhandle Eastern's present gas reserves computed on a pressure base of 16.4 pounds absolute, was approximately 1,133,709,300,000 cubic feet. The results of the computation just described are reflected in Schedule 2, Exhibit 30. The schedule is, I think, self-explanatory. Column [fol. 10979] C shown thereon is informative and is not used in reaching the results shown in Column E.

### Remaining Gas Content in Texas Reserves:

After determining the original gas content of the reserves of Panhandle Eastern in the Panhandle field, including both that under owned leases and that covered by gas purchase contracts, I calculated the gas remaining as of July 1, 1941, in the respective classes described in Schedule 2 of Exhibit 30. In making this computation, I used abandonment pressures for the acreage involved at 150, 125, 100, 75, 50, 30, 25 and 0 pounds. I calculated the remaining reserves to those different abandonment pressures, both on the basis of a 100% recovery and on the basis of a 90% recovery of the gas in place. In my judgment the use of even a 90% recovery factor is very liberal, and there is a greater probability that the actual recovery in a field of the type of the Panhandle field will be less than 90% than that the recovery will be in excess thereof. The Panhandle Field is affected by many conditions which will militate against as great a percentage of recovery of gas as would be the case with a field not having those conditions. Some of the conditions are the effect of the oil producing section of the field, the varying differences in depth of pay, the varying differences in porosity and permeability, the irregular pattern under which wells have been drilled, the irregularity in production taken from the different wells, the irregularities found in the accumulations of gas in the reservoir, and the damage to some of the producing formations resulting from the infiltration of water to the upper sands, caused by improper drilling and production practices. Even the size of the field will affect ultimate recovery because of the distance some of the gas will have to move in order to reach an outlet.

[fol. 10980] Schedule 3 Exhibit 30:

I have indicated on Schedule 3 of Exhibit 30 the results of the calculations just referred to, showing the amount of gas now in place in Panhandle Eastern's acreage and in that covered by its gas purchase contracts, as of July 1, 1941, at the varying abandonment pressures referred to. In Column B of that Schedule, I have shown the original amounts of gas in place for the different classes. In Columns C, E, G, and I, appear the amounts against which

the 90% recovery factor should be applied at the respective pressure abandonment figures used, and in Columns D, F, H, and J, I show the amounts now recoverable from said reserves at the abandonment pressures shown, after applying a 90% recovery factor and after deducting the gas known to have been withdrawn from the reserves in question.

Page 1 of said Schedule 3 shows the results obtained at abandonment pressures of 150 pounds, 125 pounds, 100 pounds and 75 pounds.

Page 2 of Schedule 3 shows the results obtained at abandonment pressures of 50 pounds, 30 pounds, 25 pounds and 0 pounds.

In reaching my estimate of the present reserves of Panhandle Eastern, I have deducted the metered production from this acreage, shown in Column C of Schedule 2 of Exhibit 30 to have been 176,909,587,000 cubic feet, and have estimated the unmetered production from the wells heretofore drilled on said acreage.

#### Schedule 4 Exhibit 30:

Schedule 4 of Exhibit 30 is a tabulation showing my estimate of unmetered gas. I estimate that the unmetered gas, so far as it has been used for drilling wells, conditioning wells and testing wells has been 46,583,875,000 cubic feet. There had also been production from the 22 wells belonging to Huber Petroleum Company prior to the time Panhandle Eastern entered into a gas purchase contract with that company. I have used as production [fol. 10981] from the Huber wells prior to that date a production of 33,876,021,000 cubic feet taken from the best available information. Therefore, in preparing Pages 1 and 2 of Schedule 3, I have deducted from the original content, known and estimated production to date in the aggregate of 256,472,325,000,000 cubic feet. A few other wells now connected to Panhandle Eastern's system had also produced small quantities of gas prior to such connection which production I have not deemed of sufficient amount to make any appreciable difference in the total.



The computation shown on Pages 1 and 2 of Schedule 3 does not take into consideration any underground drainage from the Panhandle Eastern reserves to the other portions of the field.

### Panhandle Eastern's Reserves Are Above the Average:

My estimates of Panhandle Eastern's reserves are based on the average gas content of the various parts of the field in which they are located. I consider this a very conservative basis. A study of the potential producing capacities of the wells connected to Panhandle Eastern's line shows that their average potential production is far in excess of the average for the entire field and that this condition has existed for some time. Prior to the time the Shamrock Oil and Gas Company properties were connected to the line, the average producing capacities of the gas purchase wells were only approximately average potentials of the entire field, but when the 25 wells in Moore County belonging to Shamrock Oil and Gas Company were connected the average potential producing capacities of the gas purchase wells was raised to approximately that of Panhandle Eastern's own wells.

### Explanation of Schedule 5 Exhibit 30:

Schedule 5 of Exhibit 30 reflects for the years 1935 to 1940, inclusive, the average potentials of the gas wells [fol. 10982] in the Panhandle Field as a whole, those in the West sweet gas field, those drilled on Panhandle Eastern's own properties and those drilled on acreage held under gas purchase contracts. This exhibit shows at the time of the last test (1940) the average potential of wells in the West sweet gas field was 16,019, the average potential of gas wells in the entire field was 16,294, the average of wells belonging to Panhandle Eastern Pipe Line Company was 25,025, the average of wells under gas purchase contract was 25,651. The average of all wells connected to Panhandle Eastern Pipe Line Company was 25,332, more than 50% above the average for the Panhandle Field as a whole or the average for the West sweet field. This difference in potential producing capacity reflects a very substantial difference in porosity, sand thickness, or both.

## Types of Additional Data Presented:

I have assembled from the company records certain statistical data relating to the gas acreage owned and under gas purchase contract and the production from both the Panhandle and Hugoton fields. This data is set out in the schedules which now will be discussed.

### Gas Acreage:

Schedule 6 of Exhibit 30 is a correct statement of the acreage owned by Panhandle Eastern Pipe Line Company and that held by it under gas purchase contracts. The schedule segregates the tracts, drilled and undrilled, and also segregates the tracts in which the company owns an entire interest from those in which it owns only a 50% interest. The schedule is self-explanatory.

### Argus Production:

As shown on Schedule 6 of Exhibit 30, Panhandle Eastern owns certain acreage from which it supplies gas to Argus Natural Gas Company. On Schedule 7, I show the leases from which this production is delivered to Argus Natural Gas Company, the rock pressures and potentials as of July, 1940, the production for the month of [fol. 10933] June, 1941, and the cumulative production to June 30, 1941.

### Texas Production:

Schedule 8 of Exhibit 30 shows, separately, the production from both company owned wells and gas purchase wells located in the State of Texas. The production from the company's owned wells is segregated as to the leases from which the production is taken. The production from gas purchase wells is separated according to the metering station at which the purchased gas enters the pipe line. The Schedule shows the rock pressures and potentials as of July, 1940, the production for the fiscal month of June, 1941, and the cumulative production to June 22, 1941, for the company owned wells. It shows the 1940 pressures and potentials for the gas purchase wells and the production for the fiscal month of June, 1941, but the total production shown with respect to such gas purchase wells is only the cumulative production since such wells were connected to Panhandle Eastern's line. We

have no information with respect to any former production from those wells.

#### Hugoton Main Line Production:

Schedule 9 is a table showing the production of the wells in the Hugoton Field belonging to Panhandle Eastern Pipe Line Company or the wells in which it has an interest, and which are connected to its main line. It is prepared in the same manner as that part of Schedule 8, dealing with the production in Texas from wells belonging to Panhandle Eastern Pipe Line Company.

#### Hugoton Gas Purchase Production:

Schedule 10 of Exhibit 30 shows the production from the wells in the Hugoton Field which are connected to Panhandle Eastern Pipe Line Company's main line, showing the pressures of the wells and their potentials in July, 1940, the production for the fiscal month of June, 1941, [fol. 10984] and the cumulative production to June 22, 1941. This cumulative table does not include such production, if any, as was had from any of those wells prior to the time they were connected to Panhandle's line.

#### Analysis of Cumulative Production:

Schedule 11 of Exhibit 30 is an analysis of the production to the main line system from the Panhandle Eastern owned properties and the wells on which it holds gas purchase contracts, which are connected to the main line. The tabulation is as to districts and states, showing the total cumulative production to June 22, 1941. The lower section of said Schedule shows the apportionment or division of the production during the first six months of the fiscal year 1941.

#### Comparative Statement of Production and Purchases:

Schedule 12 is a comparative statement of production and purchases for the two year period ending June 22, 1941. Comparisons are made for each month and between districts. This tabulation also shows the volumes of production sold Argus Natural Gas Company during the two year period referred to.

[fol. 10986]

## Schedule 2

Estimated Original Gas Content In The Texas Panhandle Field Under Acreage Constituting Reserves Of Panhandle Eastern Pipe Line Company As Of July 1, 1941  
Pressure Base 16.4# Absolute

Line No.	(A)	Acreage (B)	Cumulative Production to 6/22/41 (C)	Original Amount of Gas MCF per Acre (D)	Original Amount of Gas MCF (E)
1	Company Owned and Drilled — Class I	30 546	100 102 842	17 700	540 664 200
2	Company Owned and Drilled — Class II	740		5 000	3 700 000
3	Total Company Owned and Drilled	31 286			544 364 200
4	Company Owned and Undrilled — Class I	9 490		17 700	167 973 000
5	Company Owned and Undrilled — Class II	1 180		5 000	5 900 000
6	Total Company Owned and Undrilled	10 670			173 873 000
7	Total Panhandle Eastern Pipe Line Company Drilled and Undrilled	41 956			718 237 200
8	Under Gas Purchase Contract — Class I	23 473	75 909 587	17 700	415 472 100
9	Total Controlled by Panhandle Eastern Pipe Line Company	65 429	176 012 429		1 133 709 300

[fol. 10987]

Schedule 3  
Page 1

Estimated Remaining Gas Content In The Texas Panhandle Field Under Acreage Constituting Reserves Of Panhandle Eastern Pipe Line Company As Of July 1, 1941  
Pressure Base 16.4# Absolute

## Abandonment Pressures — MCF

Line No.	(A)	Original Amount of Gas (B)	150#		125#		100#		75#	
			63.1% (C)	90% (D)	68.8% (E)	90% (F)	74.5% (G)	90% (H)	80.0% (I)	90% (J)
1	Company Owned and Drilled — Class I	540 664 200	341 159 110	307 043 199	371 976 970	334 779 273	402 794 829	362 515 346	432 531 360	389 278 224
2	Company Owned and Drilled — Class II	3 700 000	2 334 700	2 101 230	2 545 600	2 291 040	2 756 500	2 480 850	2 960 000	2 664 000
3	Total	544 364 200		309 144 429		337 070 313		364 996 196		391 942 224
4	Deduct — Production to 6/22/41			100 102 842		100 102 842		100 102 842		100 102 842
5	Deduct — Unmetered to 6/22/41			16 701 750		16 701 750		16 701 750		16 701 750
6	Net			192 339 837		220 265 721		248 191 604		275 137 632
7	Company Owned and Undrilled — Class I	167 973 000	105 990 963	95 391 867	115 565 424	104 008 882	125 139 885	112 625 897	134 378 400	120 940 560
8	Company Owned and Undrilled — Class II	5 900 000	3 722 900	3 350 610	4 059 200	3 653 280	4 395 500	3 955 950	4 720 000	4 248 000
9	Total	173 873 000		98 742 477		107 662 162		116 581 847		125 188 560
10	Total Net Panhandle Eastern Pipe Line									
11	Drilled and Undrilled	718 237 200		291 082 314		327 927 883		364 773 451		400 326 192
12	Under Gas Purchase Contract — Class I	415 472 100	262 162 895	235 946 606	285 844 805	257 260 325	309 526 715	278 574 044	332 377 680	299 139 912
13	Deduct — Production to 6/22/41			75 909 587		75 909 587		75 909 587		75 909 587
14	Deduct — Unmetered to 6/22/41			29 882 125		29 882 125		29 882 125		29 882 125
15	Deduct — Production to Others to 6/22/41			33 876 021		33 876 021		33 876 021		33 876 021
16	Net			96 278 878		117 592 592		138 906 311		159 472 179
17	Total	1 133 709 300	715 370 568	643 833 512	779 991 999	701 992 800	844 613 429	760 152 087	906 967 440	816 270 696
18	Deduct — Production & Unmetered to 6/22/41			256 472 325		256 472 325		256 472 325		256 472 325
19	Net			387 361 187		445 520 475		503 679 762		559 798 371



[fol. 10988]

Schedule 3

Page 2

Estimated Remaining Gas Content In The Texas Panhandle Field Under Acreage Constituting Reserves Of Panhandle Eastern Pipe Line Company As Of July 1, 1941  
Pressure Base 16.4# Absolute

## Abandonment Pressures — MCF

Line No.	(A)	Original Amount of Gas (B)	50#		30#		25#		0#	
			85.8% (C)	90% (D)	90.2% (E)	90% (F)	91.3% (G)	90% (H)	97.0% (I)	90% (J)
1	Company Owned and Drilled — Class I	540 664 200	463 889 884	417 500 896	487 679 108	438 911 197	493 626 415	444 263 774	524 444 274	471 999 847
2	Company Owned and Drilled — Class II	3 700 000	3 174 600	2 857 140	3 337 400	3 003 660	3 378 100	3 040 290	3 589 000	3 230 100
3	Total	544 364 200		420 358 036		441 914 857		447 304 064		475 229 947
4	Deduct — Production to 6/22/41			100 102 842		100 102 842		100 102 842		100 102 842
5	Deduct — Unmetered to 6/22/41			16 701 750		16 701 750		16 701 750		16 701 750
6	Net			303 553 444		325 110 265		330 499 472		358 425 355
7	Company Owned and Undrilled — Class I	167 973 000	144 120 834	129 708 751	151 511 646	136 360 481	153 359 349	138 023 414	162 933 810	146 640 429
8	Company Owned and Undrilled — Class II	5 900 000	5 062 200	4 555 980	5 321 800	4 789 620	5 386 700	4 848 030	5 723 000	5 150 700
9	Total	173 873 000		134 264 731		141 150 101		142 871 444		151 791 129
10	Total Net Panhandle Eastern Pipe Line									
11	Drilled and Undrilled	718 237 200		437 818 175		466 260 366		473 370 916		510 216 484
12	Under Gas Purchase Contract — Class I	415 472 100	356 475 062	320 827 556	374 755 834	337 280 251	379 326 027	341 393 424	403 007 937	362 707 143
13	Deduct — Production to 6/22/41			75 909 587		75 909 587		75 909 587		75 909 587
14	Deduct — Unmetered to 6/22/41			29 882 125		29 882 125		29 882 125		29 882 125
15	Deduct — Production to Others to 6/22/41			33 876 021		33 876 021		33 876 021		33 876 021
16	Net			181 169 823		197 612 518		201 725 691		223 039 410
17	Total	1 133 709 300	972 722 580	875 450 323	1 022 605 788	920 345 209	1 035 076 591	931 568 932	1 099 698 021	989 728 219
18	Deduct — Production and Unmetered									
19	to 6/22/41			256 472 325		256 472 325		256 472 325		256 472 325
20	Net			618 977 998		663 872 884		675 096 607		733 255 894



Comparison Of Open Flow Potentials  
In Texas Panhandle Gas Field

Open Flow Potential—MCF  
1940

Line No.	(A)	Number of Wells (B)	Total (C)	Average (D)
1	Total — Panhandle Field	1 654	26 950 094	16 294
2	Total — West Sweet Panhandle Field	752	12 046 167	16 019
3	Panhandle Eastern Pipe Line Company	55	1 376 362	25 025
4	Under Gas Purchase Contract	53	1 359 479	25 651
5	Total Connected to Panhandle Eastern			
6	Pipe Line Company	108	2 735 841	25 332
7				1939
8	Total — Panhandle Field	1 572	25 829 848	16 431
9	Total — West Sweet Panhandle Field	692	11 897 607	17 193
10	Panhandle Eastern Pipe Line Company	51	1 280 107	25 100
11	Under Gas Purchase Contract	49	1 239 365	25 293
12	Total Connected to Panhandle Eastern			
13	Pipe Line Company	100	2 519 472	25 195
14				1938
15	Total — Panhandle Field	1 498	26 282 787	17 545
16	Total — West Sweet Panhandle Field	635	10 662 275	16 791
17	Panhandle Eastern Pipe Line Company	44	1 051 590	23 900
18	Under Gas Purchase Contract	43	1 105 474	25 709
19	Total Connected to Panhandle Eastern			
20	Pipe Line Company	87	2 157 064	24 794
21				1937
22	Total — Panhandle Field	1 374	23 874 256	17 376
23	Total — West Sweet Panhandle Field	624	10 153 657	16 272
24	Panhandle Eastern Pipe Line Company	37	900 970	24 351
25	Under Gas Purchase Contract	38	825 251	21 717
26	Total Connected to Panhandle Eastern			
27	Pipe Line Company	75	1 726 221	23 016
28				1936
29	Total — Panhandle Field	1 210	20 194 857	16 690
30	Total — West Sweet Panhandle Field	555	9 200 113	16 577
31	Panhandle Eastern Pipe Line Company	30	623 136	20 771
32	Under Gas Purchase Contract	30	419 236	13 975
33	Total Connected to Panhandle Eastern			
34	Pipe Line Company	60	1 042 372	17 373
35				1935
36	Total — Panhandle Field	1 109	18 606 868	16 778
37	Total — West Sweet Panhandle Field	537	8 804 095	16 395
38	Panhandle Eastern Pipe Line Company	27	536 638	19 875
39	Under Gas Purchase Contract	26	356 337	13 705
40	Total Connected to Panhandle Eastern			
41	Pipe Line Company	53	892 975	16 849
42				Initial
43	Panhandle Eastern Pipe Line Company	57	1 717 733	30 136
44	Under Gas Purchase Contract	53	1 532 632	28 918
45	Total Connected to Panhandle Eastern			
46	Pipe Line Company	110	3 250 365	29 549

## Gas Acreage Owned And Under Gas Purchase Contracts Held By Panhandle Eastern Pipe Line Company As Of June 30, 1941

Line No.	State (A)	County (B)	100% Owned (C)	Drilled (D)	Undrilled (E)	50% Owned (F)	Drilled (G)	Undrilled (H)
1	<u>Panhandle Eastern Pipe Line Company Acreage</u>							
2	Texas	Moore	28 092 39	17 978 39	10 114 00			
3	"	Carson	8 478 50	7 762 50	716 00			
4	"	Potter	5 462 81	5 282 81	180 00			
5	"	Hutchinson	342 60	262 60	80 00			
6	"	Sherman	5 411 00		5 411 00			
7	"	Hansford	17 985 30		17 985 30			
8	Total Texas		55 772 60	31 286 30	34 486 30			
9	Oklahoma	Texas	79 224 00		79 224 00			
10	Kansas	Seward	14 640 00		14 640 00			
11	"	Stevens	37 707 35	13 730 95	23 976 40	8 120 00	8 120 00	
12	"	Haskell	3 480 00		3 480 00			
13	"	Morton	2 560 00	960 00	1 600 00	2 880 00	2 880 00	
14	"	Grant	31 880 00	4 480 00	27 400 00	6 320 00	6 320 00	
15	Total Kansas		90 267 35	19 170 95	71 096 40	17 320 00	17 320 00	
16	Sub-Total		235 263 95	50 457 25	184 806 70	17 320 00	17 320 00	
17	<u>Panhandle Eastern Pipe Line Company Acreage Under Gas Purchase Contract to Argus Natural Gas Company, Inc.</u>							
18	100% Panhandle Eastern Pipe Line Company		1 200 00	400 00	800 00			
19	50% P.E.P.L. Co. 50% Stevens Co. O&G Co.					640 00	640 00	
20	50% P.E.P.L. Co. 25% Stevens, 25% S.W. Kansas O&G Co.					1 440 00	800 00	640 00
21	50% P.E.P.L. Co. 50% S.W. Ks. O&G Co.					7 467 91	3 839 41	3 628 50
22	Total to Argus Natural Gas Company, Inc. (Stevens Co. Ks.)		1 200 00	400 00	800 00	9 547 91	5 279 41	4 268 50
23	Total Acreage		236 463 95	50 857 25	185 606 70	26 867 91	22 599 41	4 268 50
24	Grand Total — 100% Owned Plus 50% Owned		263 331 86					
25	<u>Acreage owned by others under Gas Purchase Contract to Panhandle Eastern Line Company</u>							
26	Stevens County, Kansas	14 000		Moore County, Texas	15 979			
27	Morton County, Kansas	2 040		Carson County, Texas	2 087			
28	Seward County, Kansas	640		Carson & Hutchinson Counties				
29	Grant County, Kansas	18 395		Texas	5 407			
30	Total Kansas	35 075		Total Texas	23 473			

[fol. 10992]

Schedule 7

## Hugoton Production To Argus Natural Gas Company, Inc. By Panhandle Eastern Pipe Line Company Et Al.

Line No.	Well No. (A)	Lease (B)	No. of Acres (C)	R.P. July 1940 (D)	Volume July 1940 MCF (E)	Production from 5/31/41 to 6/30/41 MCF (F)	Total Production to 6/30/41 MCF (G)
1		<u>50% Panhandle Eastern Pipe Line Company — 50% Southwest Kansas O. &amp; G. Co.</u>					
2	5489C 1-1	Bane (Loflin)	640	400	10 336	12 279	1 289 199
3	5465C 1-10	Gaskill (Ham)	160	403	1 619	5 878	975 308
4	5487C 1-2	Guyer	320	400	20 080	6 016	1 206 634
5	5466C 1-11	Ramey	158	415	2 147	4 721	1 144 616
6	5492C 1-7	Renfro	640	388	7 152	20 179	1 011 161
7	5493C 1-2	Spikes	320	404	2 147	5 948	1 004 629
8	Total — 6 Wells		2 238	Av. 401.66	43 481	57 021	6 631 547
9		<u>50% Panhandle Eastern Pipe Line Company — 50% Stevens County Oil And Gas Co.</u>					
10	5488C 1-15	Kelley	320	401	5 136	3 271	1 897 502
11	5462C 1-16	"	320	406	1 587	4 768	693 280
12	Total — 2 Wells		640	Av. 403.50	6 723	8 039	2 590 782
13		<u>50% Panhandle Eastern Pipe Line Co. — 25% Southwest Kansas O&amp;G Co. — 25% Stevens County O&amp;G Co.</u>					
14	5464C 1-31	Crawford	160	408	4 192	4 075	1 790 427
15	5458C 1-32	"	160	410	2 589	2 764	1 182 043
16	5467C 1-36	"	160	410	2 589	2 987	1 162 837
17	5484C 1-12	Stuart	160	398	23 842	4 830	1 719 528
18	Total — 4 Wells		640	Av. 406.50	33 212	14 656	5 854 835
19		<u>100% Panhandle Eastern Pipe Line Company</u>					
20	5483C 1-12	Greenwood	320	394	17 984	7 890	1 057 025
21	Total P.E.P.L. Co., Et Al — 13 Wells		3 838	Av. 402.85	101 400	87 606	16 134 189*

\*Includes gas produced and sold to P.E.P.L. Co. for resale as drilling gas.

[fol. 10993]

Schedule 8

Page 1

## Texas Production To Panhandle Eastern Pipe Line Company

Note 1. The number of acres shown represents only the number of acres in the particular lease used for proration purposes in connection with the well described. Many of the leases on which the wells are drilled have proven acreage in excess of that shown.

Note 2. The MCF volume shown hereon represents the potentials determined by back pressure tests.

(Company Owned Wells)								
Line No.	Well No. (A)	Lease (B)	No. of Acres (C)	R.P. July 1940 (D)	Volume July 1940 MCF (E)	Production from 5/23/41 to 6/22/41 MCF (F)	Total Production to 6/22/41 MCF (G)	
1	<u>100% Panhandle Eastern Pipe Line Company</u>							
2	1006A 1-9	Bost	120	327	15 000	7 789	2 351 383	
3	1011A 1-14	"	63	336	16 000	15 613	2 154 986	
4	Total — 2 Wells		183	Av. 331.50	31 000	23 402	4 506 369	
5	1030A 1-22	Brown	640	356	45 000	40 321	3 439 279	
6	1051A 1-34	"	640	359	89 000	30 016	977 393	
7	1034A 1-36	"	640	359	32 000	47 271	2 651 663	
8	1052A 1-64	"	640	374	16 400	16 154	656 895	
9	Total — 4 Wells		2 560	Av. 362.00	182 400	133 762	7 725 230	
10	1017A 1-51	Barnett	80	363	35 900	20 761	2 498 458	
11	1022A 1-60	"	640	359	11 400	17 202	3 207 788	
12	1008A 1-77	"	640	363	14 900	34 084	3 380 320	
13	1029A 1-79	"	320	356	9 300	30 755	1 467 868	
14	1031A 1-81	"	480	345	15 000	24 142	2 377 813	
15	1013A 1-84	"	100	351	18 900	17 371	2 893 569	
16	1018A 1-86	"	80	353	14 800	13 125	2 286 188	
17	1023A 1-97	"	480	341	21 000	24 030	2 357 060	
18	1007A 1-99	"	560	359	31 700	22 994	2 542 698	
19	1021A 1-108	"	100	255	3 800	—	368 441	
20	1037A 1-119	"	520	261	20 000	29 001	1 297 279	
21	Total — 11 Wells		4 000	Av. 336.91	196 700	233 411	24 677 482	
22	1002A 1-37	Mastersen	640	379	22 000	44 004	3 708 750	
23	1042A 1-38	"	640	376	18 300	30 985	1 588 311	
24	1009A 1-85	"	640	388	4 700	33 883	1 423 618	
25	Total — 3 Wells		1 920	Av. 381.00	45 000	108 872	6 720 679	
26	1032 1-100	McBride	640	378	23 500	35 941	2 765 281	
27	1047A 1-104	"	640	390	26 000	31 125	1 577 303	
28	Total — 2 Wells		1 280	Av. 384.00	49 500	67 066	4 342 584	



[fol. 10994]

Schedule 8  
Page 2

## Texas Production To Panhandle Eastern Pipe Line Company

(Company Owned Wells)  
(Continued)

Line No.	Well No. (A)	Lease (B)	No. of Acres (C)	R.P. # July 1940 (D)	Volume July 1940 MCF (E)	Production from 5/23/41 to 6/22/41 MCF (F)	Total Production to 6/22/41 MCF (G)
1	<u>100% Panhandle Eastern Pipe Line Company</u>						
2	1000A 1-4	Sanford	640	332	2 500	7 192	705 294
3	1046A 1-12	"	640	359	14 700	67 439	1 066 889
4	1043A 1-13	"	640	366	25 000	37 988	1 743 020
5	1045A 1-14	"	640	369	25 300	45 158	1 661 365
6	1044A 1-16	"	640	367	17 600	24 115	1 586 340
7	Total — 5 Wells		3 200	Av. 358.60	85 100	181 892	6 762 908
8	1053A 1-20	Sneed Estate	640	354	15 400	20 810	651 081
9	1025A 1-33	"	640	359	12 300	26 324	2 556 210
10	1055A 1-37	"	640	361	27 500	47 496	889 961
11	1012A 1-48	"	640	365	14 800	31 075	2 503 041
12	1054A 1-50	"	320	361	260 000	148 431	2 082 010
13	Total — 5 Wells		2 880	Av. 360.00	330 000	274 137	8 682 303
14	1049A 1-3	J. T. Sneed Est.	640	343	17 200	20 397	712 184
15	1014A 1-6	"	320	372	8 300	11 891	1 386 865
16	1060A 1-9	"	640	348*	11 000*	23 811	23 811
17	1008A 1-23	"	640	365	9 900	19 112	2 254 365
18	1057A 1-23A	"	640	362	30 900	30 631	398 277
19	1050A 1-24	"	640	350	7 200	27 690	532 020
20	1048A 1-25	"	640	339	13 000	11 019	1 119 984
21	1056A 1-26	"	640	362	10 200	18 477	310 709
22	1036A 1-27	"	640	347	9 800	36 950	1 604 917
23	1035A 1-28	"	640	334	5 180	8 792	1 147 418
24	1038A 1-43	"	640	352	15 900	27 544	1 500 148
25	1039A 1-44	"	640	354	18 900	13 928	1 842 994
26	1007A 1-45	"	640	350	7 700	23 188	1 998 578
27	Total — 13 Wells		8 000	Av. 351.38	165 780	273 430	14 832 270
28	1041A 1-25	Thompson	640	362	23 000	34 755	1 450 202
29	1033A 1-63	"	640	357	14 500	36 605	1 835 385
30	Total — 2 Wells		1 280	Av. 359.50	37 500	71 360	3 285 587

\*Unofficial Test.



[fol. 10995]

Schedule 8  
Page 3Texas Production To Panhandle Eastern Pipe Line Company  
(Company Owned Wells)  
(Continued)

Line No.	Well No. (A)	Lease (B)	No. of Acres (C)	R.P. July 1940 \$ (D)	Volume July 1940 MCF (E)	Production from 5/23/41 to 6/22/41 MCF (F)	Total Production to 6/22/41 MCF (G)
1	<u>100% Panhandle Eastern Pipe Line Company</u>						
2	1005A 1-55	Zofness	160	364	9 600	15 855	1 981 542
3	1023A 2-55	"	160	364	77 500	66 892	6 385 549
4	Total — 2 Wells		320	Av. 364.00	87 100	82 747	8 367 091
5	1010A 1-6	Bennett	320	367	8 600	21 485	1 404 272
6	1058A 1-22	"	640	364	22 600	52 689	346 913
7	1015A 1-91	Bivins	80	300	14 000	—	948 546
8	1040A 1-18	Nield	640	360	118 000	109 099	3 067 476
9	1016A 1-102	Rockwell	320	380	5 000	19 856	1 474 541
10	1004A 1-5	State	640	397	13 200	20 601	2 571 082
11	1059A 1-5	Walker	640	357	35 750	28 243	387 509
12	Total — 7 Wells		3 280	Av. 360.71	217 150	251 973	10 200 339
13	Total Connected P.E.P.L. Co. — 55 Wells		28 903	Av. 354.66	1 427 230	1 702 052	100 102 842
14	<u>Unconnected Wells</u>						
15	1061A 1-15	Massey	640	358*	42 400*	—	—
16	Total P.E.P.L. Co. — 57 Wells		29 543	Av. 354.72	1 469 630	1 702 052	100 102 842

\*Unofficial Test Completed June 1941.

[fol. 10996]

Schedule 8  
Page 4Texas Production To Panhandle Eastern Pipe Line Company  
(Continued)  
(Gas Purchase Wells)

Line No.	Number of Wells (A)	Meter Station (B)	No. of Acres (C)	R.P. July 1940 (D)	Volume July 1940 MCF (E)	Production from 5/23/41 to 6/22/41 MCF (F)	Total Production to 6/22/41 MCF (G)
<u>Other Producers</u>							
1							
2	3 Wells 1-8	Huber-Johnson	800	Av. 292.00	44 500	41 622	3 607 349
3	19 " 1-11	" -Sanford	4 376	" 238.58	203 860	240 308	16 371 652
4	Total — 22 Wells		5 176	Av. 245.86	248 360	281 930	19 979 001
5	2 Wells 2-MR	King-Sneed	720	Av. 271.50	28 600	39 874	1 774 111
6	1 Well 1-22	Navajo-Poling	640	371.00	12 800	34 268	6 212 973
7	1 " 3-22	" -Poling	640	371.00	15 900	29 519	6 040 816
8	Total — 2 Wells		1 280	Av. 371.00	28 700	63 787	12 253 789
9	1 Well 1-93	No. Nat. Gas-Bivins	160	350.00	17 200	23 928	1 339 801
10	1 " 1-24	" " -Poling	240	369.00	9 300	7 185	2 227 432
11	Total — 2 Wells		400	Av. 359.50	26 500	31 113	3 567 233
12	2 Wells 1-32	Shamrock-A. Sneed	1 280	Av. 358.50	91 400	77 384	4 603 924
13	1 Well JG	" -J. T. Sneed Estate	640	367.00	33 200	28 014	2 455 939
14	4 Wells 15-1	" -J. T. Sneed	2 560	Av. 345.25	63 980	116 289	2 079 270
15	3 " 11-29	" -J. T. Sneed	1 920	" 361.00	65 700	65 374	3 814 178
16	3 " 5-40	" -J. T. Sneed	1 920	" 348.67	48 380	70 359	4 257 824
17	1 Well 7-43	" -J. T. Sneed	640	363.00	14 900	34 445	1 187 942
18	2 Wells 10-49	" -J. T. Sneed	640	Av. 367.00	246 500	228 620	5 261 454
19	2 " 3-55	" -J. T. Sneed	960	" 364.00	210 000	146 478	6 083 458
20	3 " 12-Snow	" -J. T. Sneed	1 920	" 306.67	96 000	12 852	1 244 502
21	3 " 1-23	" -Thompson	1 920	" 366.00	128 500	141 354	6 951 133
22	1 Well 3-60	" -Thompson	640	" 372.00	35 500	55 289	395 829
23	Total — 25 Wells		15 040	" 352.08	1 032 060	976 458	38 335 453
24	Total Other Producers — 53 Wells		22 618	Av. 305.94	1 364 220	1 393 162	75 909 587
25	Total P.E.P.L. Co., et al (Page 3) — 57 Wells		29 543	Av. 354.72	1 469 630	1 702 052	100 102 842
26	Grand Total — Texas — 110 Wells		52 159	Av. 331.22	2 833 850	3 095 214	176 012 429

[fol. 10997]

Schedule 9  
Page 1

## Hugoton Production To Panhandle Eastern Pipe Line Company

Note: The number of acres shown for each well represents only the acreage used by the company for proration purposes. Many of the leases cover acreage in excess of that shown. The volume shown represents the potentials determined by Pitot tube tests in the summer of 1940.

## 100% Panhandle Eastern Pipe Line Company

Line No.	Well No. (A)	Lease (B)	No. of Acres (C)	R.P. July 1940 (D)	Volume July 1940 MCF (E)	Production from 5/23/41 to 6/22/41 MCF (F)	Total Production to 6/22/41 MCF (G)
<u>Hugoton 16" Main Line</u>							
1							
2	5525C 1-25	Armstrong	640	415	20 208	10 287	474 946
3	5480C 1-22	Howell-Rhinehart	420	415	8 131	—	1 887 796
4	5470C 1-23	"	420	418	6 598	—	921 245
5	5473C 1-34	Hull	480	393	7 973	5 498	1 819 224
6	5474C 1-28	Liberty Life	480	411	25 764	15 049	1 039 394
7	5482C 1-6	Moorhead (Johnson)	320	409	4 714	1 489	1 110 724
8	5505C 1-27	Morgan	640	402	4 485	12 044	605 241
9	5516C 1-35	"	640	384	24 188	31 519	488 425
10	5534C 1-3	Nix	640	387	7 381	13 268	192 270
11	5478C 1-1	Phillips	160	402	6 142	4 976	1 490 242
12	5479C 1-2	Shirley	640	402	22 560	11 181	1 315 427
13	5490C 1-16	Simmons	320	425	13 408	—	515 498
14	5508C 1-26	Stecher	640	405	13 408	7 769	596 896
15	5475C 1-34	Stone	400	391	8 787	4 882	1 872 072
16	5509C 1-8	Younggren	640	419	13 024	5 957	450 846
17	5506C 1-11	"	640	427	15 136	—	442 675
18	5507C 1-18	"	640	422	27 137	11 637	525 352
19	5463C 1-24	"	640	417	1 940	453	435 271
20	5535C 1-32	"	640	407	5 568	10 464	240 551
21	Total— 19 Wells		9 960	Av. 407.95	236 552	116 423	16 424 005
22	<u>Grant County 18" Main Line</u>						
23	5528C 1-33	Cavner	640	396	9 648	11 765	386 592
24	5529C 1-16	Howell	640	428	16 272	17 788	523 306
25	5524C 1-17	Ill. Banker's Life	640	429	6 142	7 841	357 019
26	5530C 1-17	Kilgore	640	431	9 160	5 722	355 470
27	5519C 1-2	Light	640	414	11 696	3 527	478 365
28	5512C 1-36	McClelland	640	428	7 181	6 628	408 130
29	5518C 1-34	McClure	640	411	13 216	9 510	523 160
30	5511C 1-30	Neese	640	437	10 941	1 410	458 947
31	5527C 1-27	Newby	640	428	5 418	6 512	319 593
32	5517C 1-16	Riverview State Bank	640	416	4 342	13 179	345 229
33	5526C 1-20	Spikes	640	422	23 120	12 507	449 593

Hugoton Production To Panhandle Eastern Pipe Line Company  
100% Panhandle Eastern Pipe Line Company  
(Continued)

Line No.	Well No. (A)	Lease (B)	No. of Acres (C)	R.P. July 1940 # (D)	Volume July 1940 MCF (E)	Production from 5/23/41 to 6/22/41 MCF (F)	Total Production to 6/22/41 MCF (G)
1		<u>Grant County 18" Main Line (Continued)</u>					
2	5520C 1-24	Stevesson	640	415	3 232	15 384	320 039
3	5513C 1-11	Taggart	640	428	7 323	874	303 135
4	5522C 1-35	Zimmerman	640	412	6 848	12 995	388 874
5	Total — 14 Wells		8 960	Av. 421.07	134 539	125 642	5 617 452
6	Total P.E.P.L. Co. — 33 Wells		18 920	Av. 413.52	371 091	272 065	22 041 457
7		50% Panhandle Eastern Pipe Line Company And 50% Saturn Oil And Gas Company					
8		<u>Hugoton 16" Main Line</u>					
9							
10	5498C 1-19	Bane	320	401	17 792	11 168	513 145
11	5504C 1-26	Buddenburg	640	394	9 779	13 073	1 140 579
12	5476C 1-32	Costley	640	413	15 888	6 382	1 183 331
13	5499C 1-6	Greening	640	412	12 464	4 735	501 040
14	5491C 1-13	Gregory	560	393	5 600	1 362	1 651 264
15	5497C 1-18	"	320	405	4 192	4 683	386 305
16	5460C 1-19	"	320	395	8 787	2 507	740 667
17	5501C 1-30	"	640	398	7 864	20 814	928 808
18	5471C 1-31	"	560	398	3 035	9 221	994 797
19	5503C 1-23	Light	640	392	12 653	2 176	1 115 511
20	5495C 1-9	Phillips	640	395	6 506	20 466	994 740
21	5472C 1-16	"	480	400	5 488	1 951	1 480 403
22	5459C 1-5	Rickart	640	400	4 094	15 310	1 074 057
23	5496C 1-8	"	480	395	8 859	16 726	562 379
24	5539C 1-36	Sharp	640	407	30 885	17 170	139 997
25	Total — 15 Wells		8 160	Av. 399.87	153 886	152 744	13 407 023
26		<u>Grant County 18" Main Line</u>					
27	5542C 1-28	Dappert	640	427	18 717	1 127	91 974
28	5541C 1-33	Joyce	640	423	22 532	1 978	119 990
29	5531C 1-36	"	640	426	22 126	7 068	418 079
30	5514C 1-8	Mason	640	422	10 315	10 642	476 217
31	5523C 1-35	McCandless	560	424	15 888	2 375	541 575
32	5540C 1-15	McClaren	640	430	14 368	14 392	149 120
33	5538C 1-4	McClure	640	410	19 312	11 512	302 242
34	5515C 1-3	Parsons	640	423	9 318	10 436	462 767
35	5461C 1-4	"	640	422	21 000	2 053	497 110



[fol. 10999]

Schedule 9  
Page 3

**Hugoton Production To Panhandle Eastern Pipe Line Company  
50% Panhandle Eastern Pipe Line Company And 50% Saturn Oil And Gas Company  
(Continued)**

Line No.	Well No. (A)	Lease (B)	No. of Acres (C)	R.P. July 1940 # (D)	Volume July 1940 MCF (E)	Production from 5/23/41 to 6/22/41 MCF (F)	Total Production to 6/22/41 MCF (G)
1	<u>Grant County 18" Main Line (Continued)</u>						
2	5521C 1-9	Parsons	640	428	7 973	13 859	443 194
3	5523C 1-25	"	640	428	13 984	15 826	380 745
4	5537C 1-34	"	640	427	43 940	4 049	382 217
5	5532C 1-20	Towler	640	420	15 320	1 152	328 850
6	5536C 1-21	"	640	410	13 600	711	181 216
7	5510C 1-26	"	640	392	5 291	6 384	339 938
8	Total — 15 Wells		9 520	Av. 421.47	254 284	103 564	5 115 234
9	Total — 50% P.E.P.L. Co. And						
10	50% Saturn O&G Co. —						
11	30 Wells		17 680	Av. 410.67	408 170	256 308	18 522 257
12	50% Panhandle Eastern Pipe Line Company						
13	And 50% Southwest Kansas Oil And Gas Company						
14	<u>Hugoton 16" Main Line</u>						
15	5488C 1-15	Gracey	160	410	3 990	12 137	1 054 671
16	5469C 1-34	Crawford	160	415	5 600	998	687 614
17	5494C 1-3	Ham	320	412	13 984	3 914	765 714
18	5502C 1-16	Hamilton	480	410	14 560	8 015	564 363
19	Total 50% P.E.P.L. Co. —						
20	50% S.W. Kansas O&G Co.						
21	4 Wells		1 120	Av. 411.75	38 134	25 064	3 072 362
22	Total 50% P.E.P.L. Co. —						
23	50% Saturn O&G Co.						
24	30 Wells		17 680	Av. 410.67	408 170	256 308	18 522 257
25	Total 50% P.E.P.L. Co. —						
26	50% Others						
27	34 Wells		18 800	Av. 410.79	446 304	281 372	21 594 619



[fol. 11000]

Schedule 10  
Page 1

## Hugoton Production To Panhandle Eastern Pipe Line Company

## Gas Purchase Wells

Line No.	Well No. (A)	Producer (B)	Lease (C)	No. of Acres (D)	R.P. July 1940 # (E)	Volume July 1940 MCF (F)	Production from 5/23/41 to 6/22/41 MCF (G)	Total Production to 6/22/41 MCF (H)
<u>Hugoton 16" Main Line</u>								
1								
2	1-3	Benedum	Brecheisen	160	425	2 507	1 163	269 496
3	1-3	"	Grandy	160	417	4 094	2 253	476 480
4	1-2	"	Kramer	320	405	4 294	1 719	366 512
5	1-4	"	Lowry	160	420	4 094	1 425	345 285
6	1-10	"	Meyers	160	420	4 294	1 141	373 655
7	1-27	"	B. Meyers	160	408	5 944	2 590	683 397
8	1-3	"	Mitchell	160	419	4 342	1 474	423 618
9	Total — 7 Wells			1 280	Av. 416.29	29 569	11 765	2 938 443
10	1-10	Kirney	Baldrige	320	393	20 464	6 244	1 547 451
11	1-16	Kuhn	Armstrong	600	399	13 984	7 159	482 274
12	1-33	"	Kendall	640	400	11 696	4 216	578 276
13	1-33	"	Light	640	394	13 408	13 180	695 540
14	1-2	"	Nix	640	390	16 832	5 281	484 421
15	1-14	"	Young	160	401	15 320	1 801	459 549
16	1-1	"	Younggren	640	428	5 864	—	407 494
17	Total — 6 Wells			3 320	Av. 402.00	77 104	31 637	3 107 554
18	1-1	Pioneer	Beaver	160	425	3 603	1 250	389 572
19	1-16	"	Eby	480	421	7 058	3 039	731 930
20	1-29	"	Morris	160	424	21 968	3 194	302 814
21	Total — 3 Wells			800	Av. 423.33	32 629	7 483	1 424 316
22	1-10	Sidwell	Jenkins	160	399	20 080	2 468	1 282 114
23	1-9	"	Snare	160	400	9 605	2 587	1 101 475
24	Total — 2 Wells			320	Av. 399.50	29 685	5 055	2 383 589
25	1-36	S.W. Kansas	Hallock	160	388	4 719	7 157	525 972
26	2-36	"	"	160	—	—	—	527 171
27	Total — 2 Wells			320	388	4 719	7 157	1 053 143

\*No July 1940 test — Well being reconditioned.

[fol. 11001]

Schedule 10  
Page 2Hugoton Production To Panhandle Eastern Pipe Line Company  
Gas Purchase Wells  
(Continued)

Line No.	Well No. (A)	Producer (B)	Lease (C)	No. of Acres (D)	R P. July 1940 # (E)	Volume July 1940 MCF (F)	Production from 5/23/41 to 6/22/41 MCF (G)	Total Production to 6/22/41 MCF (H)
1			<u>Hugoton 16" Main Line (Continued)</u>					
2	1-23	Stevens O&G	Beavers	640	407	18 544	13 932 <sup>8</sup>	302 335
3	1-27	" "	Brown	160	425	31 120	3 644	596 287
4	1-34	" "	Brubaker	640	414	21 408	7 521	317 009
5	1-22	" "	Burrows	640	413	11 888	10 192	355 565
6	1-13	" "	Finch	160	415	18 544	3 339	442 049
7	1-35	" "	Slease	160	389	25 792	4 613	398 366
8	1-4	" "	Spikes	160	417	19 504	1 891	351 770
9	1-11	" "	Young	160	398	21 216	3 462	674 721
10	Total — 8 Wells			2 720	Av. 409.75	168 016	48 594	3 438 102
11	5 Wells United Prod.			3 160	Av. 394.00	86 096	44 517	3 442 911
12	Total Hugoton 16" Main Line — 34 Wells*			12 240	Av. 406.79	448 282	162 452	19 335 509
13	*Includes Southwest Kansas — Hallock 2-36. 33 Wells used for acreage.							
14			<u>Grant County 18" Main Line</u>					
15	10 Wells Columbian			6 353	Av. 428.00	163 248	87 212	5 205 145
16	1-16	F. P. Parish	Bohnstengel	640	418	5 637	2 990	331 617
17	1-18	" "	Burnham	602	419	3 603	2 835	289 760
18	1-20	" "	Grant Co. St. Bk.	640	420	3 360	2 739	303 754
19	1-26	" "	Sullivan	640	432	6 270	6 075	558 175
20	1-17	" "	Whitson	640	421	5 418	3 632	386 342
21	Total — 5 Wells			3 162	Av. 422.00	24 288	18 271	1 869 648
22	1-3	Stevens O&G	Leonard	640	409	19 696	7 729	148 583
23	1-16	" "	McClure	640	417	19 312	5 442	145 294
24	1-34	" "	Palmer	640	426	13 972	6 547	6 547
25	1-25	" "	Smith	640	427	25 363	13 169	13 169
26	1-21	" "	Spikes	600	423	14 752	7 827	448 091
27	Total — 5 Wells			3 160	Av. 420.40	93 095	40 714	761 684

[fol. 11002]

Schedule 10  
Page 3Hugoton Production To Panhandle Eastern Pipe Line Company  
Gas Purchase Wells  
(Continued)

Line No.	Well No. (A)	Producer (B)	Lease (C)	No. of Acres (D)	R.P. July 1940 # (E)	Volume July 1940 MFC (F)	Production from 5/23/41 to 6/22/41 MCF (G)	Total Production to 6/22/41 MCF (H)
1			<u>Grant County 18" Main Line (Continued)</u>					
2	1-13	Sullivan	Stevens	640	421	3 936	10 822	347 551
3	2 Wells	United Prod.	Grigaby	1 200	Av. 419.00	21 830	3 616	833 454
4	"	"	Harper	2 560	Av. 424.50	45 274	18 924	2 018 498
5	"	"	McClelland	1 280	" 412.00	16 208	5 200	790 400
6	"	"	Stevens	1 280	" 415.00	15 461	26 579	821 392
7	Total — 10 Wells			6 320	Av. 419.00	98 773	54 319	4 463 744
8	1-22	R. K. Wilson Est.	Helmly	640	420.00	4 485	3 266	377 448
9	1-25	"	Patterson	640	415.00	5 568	4 440	394 551
10	2 Wells	"	Sledd Farm Corp.	1 280	Av. 420.00	16 045	5 749	867 016
11	1-36	"	Smith	640	425.00	5 717	3 922	427 206
12	Total — 5 Wells			3 200	Av. 420.00	31 815	17 377	2 066 221
13	Total — Grant County 18" Main Line — 36 Wells			22 835	Av. 422.31	415 155	228 715	14 713 993
14			<u>Summary Of Totals</u>					
15	Total — Other Producers — 70 Wells			35 075	Av. 414.88	863 437	391 167	34 049 502
16	Total 50% P.E.P.L. Co. — 50% Sat. O&G Co. — 30 Wells			17 680	Av. 410.67	408 170	256 308	18 522 257
17	Total 50% P.E.P.L. Co. — 50% S.W. Kansas — 4 Wells			1 120	Av. 411.75	38 134	25 064	3 072 362
18	Total 100% P.E.P.L. Co. — 33 Wells			18 920	Av. 413.52	371 091	272 065	22 041 457
19	Grand Total — Hugoton District	137 Wells		72 795	Av. 413.53	1 680 832	944 604	77 685 578

[fol. 11003]

Schedule 11

## Analysis of Cumulative Production To Main Line To And Including Fiscal Month of June, 1941

Line No.	Ownership (A)	No. of Wells (B)	Production MCF (C)	% of Total District Production (D)	% of Total Main Line Production (E)	Total Cumulative Production to 6/22/41 (F)	% of Total Cumulative Production to 6/22/41 (G)		
1		Texas District							
2	P. E. P. L. Co.	56	1 702 052	54.99	41.71	100 102 842	39.10		
3	Gas Purchase	53	1 393 162	45.01	34.14	75 909 587	29.65		
4	Total Texas	109	3 095 214	100.00	75.85	176 012 429	68.75		
5		Oklahoma District							
6	Gas Purchase	(Contract)	40 683	100.00	1.00	2 304 187	0.90		
7	Total Texas & Oklahoma		3 135 847	100.00	76.85	178 316 616	69.65		
8		Hugoton District							
9	P. E. P. L. Co.	50	412 751	43.70	10.12	32 838 766.5	12.83		
10	Gas Purchase	87	531 853	56.30	13.03	44 846 811.5	17.52		
11	Total Kansas	137	944 604	100.00	23.15	77 685 578.0	30.35		
12		Total — All Districts							
13	P. E. P. L. Co.	106	2 114 803		51.83	132 941 608.5	51.93		
14	Gas Purchase	140	1 965 648		48.17	123 060 585.5	48.07		
15	GRAND TOTAL	246	4 080 451		100.00	256 002 194	100.00		
16		Division Of Production							
17		First Six Months of Fiscal Year 1941							
18		(From 12/23/40 to 6/22/41)							
19		Produced	% of Total	% of Total	Purchased	% of Total	% of Total	Purchased and	% of Total
20		MCF	District	Main Line	MCF	District	Main Line	Produced MCF	Main Line
21	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)
22	Texas District	11 914 524	54.96	39.97	9 765 653	45.04	32.77	21 680 177	72.74
23	Oklahoma District				313 324	100.00	1.05	313 324	1.05
24	Kansas District	3 013 551.5	38.57	10.11	4 799 201.5	61.43	16.10	7 812 753	26.21
25	Total Main Line	14 928 075.5		50.08	14 878 178.5		49.92	29 806 254	100.00



[fol. 11004]

Schedule 12

## Comparative Statement Of Production And Purchases From Each District For The Two Years Ended June 22, 1940 And June 22, 1941

Line No.	Month (A)	M		C		F					
		Texas District		Oklahoma District		Hugoton District		To Argus Natural Gas Co., Inc.		Totals	
		Year Ended 6/22/41 (B)	Year Ended 6/22/40 (C)	Year Ended 6/22/41 (D)	Year Ended 6/22/40 (E)	Year Ended 6/22/41 (F)	Year Ended 6/22/40 (G)	Year Ended 6/30/41 (H)	Year Ended 6/30/40 (I)	Year Ended June 1941 (J)	Year Ended June 1940 (K)
1	July	2 010 693	1 942 600	20 316	26 937	1 155 920	880 023	103 045	109 812	3 289 974	2 959 372
2	August	2 817 175	2 251 236	14 555	33 639	480 061	766 795	100 178	114 256	3 411 969	3 465 926
3	September	2 840 330	2 643 597	37 240	40 908	848 995	720 497	162 366	111 063	3 828 931	3 516 065
4	October	3 093 930	2 527 644	44 728	46 699	1 122 329	1 239 687	162 500	114 965	4 423 487	3 928 995
5	November	3 361 547	3 307 878	32 674	46 972	1 491 274	1 070 952	193 217	220 963	5,978 712	4,646 765
6	December	3 300 109	2 628 432	36 978	52 091	2 081 504	1 797 352	236 399	184 017	5 604 990	4 661 892
7	January	3 616 663	3 149 104	60 354	43 988	1 730 545	2 150 690	241 817	207 057	5 649 379	5 550 839
8	February	3 793 856	3 172 470	70 307	55 619	1 985 058	2 047 930	221 774	183 058	6 070 995	5 459 077
9	March	3 545 103	3 120 122	41 778	60 957	1 640 907	1 475 786	184 924	157 524	5 412 712	4 814 029
10	April	4 039 092	3 275 813	57 165	18 589	783 497	1 200 985	106 851	100 227	4 986 605	4 595 614
11	May	3 590 249	3 023 914	43 087	33 329	728 142	885 329	77 904	87 946	4 439 382	4 030 518
12	June	3 095 214	3 005 785	40 633	29 600	944 604	408 294	87 606	78 229	4 168 057	3 521 908
13	Total	39 103 961	34 048 595	499 815	489 328	14 942 836	14 644 320	1 818 581	1 669 117	56 365 193	50 851 000



[fol. 11010]

## Exhibit 36.

Written Testimony of Witness Glenn G. Bartle.

[fol. 11011] Statement of Qualifications and Experience  
of Glenn G. Bartle.

## 1. Name, address, and age.

Glenn G. Bartle, Kansas City, Missouri, age 42.

## 2. Present position:

Professor of Geology and Dean of Liberal Arts,  
University of Kansas City.

## 3. Education:

1921—A.B. in Geology, Indiana University.

1923—A.M. in Geology, Indiana University.

1924-25—Graduate Student, University of Chicago.

1932—Ph.D. in Geology (Stratigraphic and Economic) Indiana University.

## 4. Professional Experience:

## (a) As Instructor:

1925 to 1933—Instructor in Geology, Junior  
College of Kansas City.1933 to 1938—Chairman, Department of Geology,  
University of Kansas City.1938 to Present—Professor of Geology and  
Dean of Liberal Arts, University of Kansas City.

## (b) As Consultant:

1932 to Present—Consulting Geologist, Missouri  
Valley Oil and Gas Company, Independence, Missouri.[fol. 11012] 1935 to Present—Consulting Geologist, Missouri  
Western Gas Company, Butler, Missouri.

1936 to 1938—Consulting Geologist, Phoenix Joint Stock Land Bank, Kansas City, Missouri.

Employed by Panhandle Eastern Pipe Line Company or affiliates as Consulting Geologist 1929 to 1933, 1935, 1936, and 1941.

Numerous other temporary geological projects.

5. Publications:

I am author of eleven geological publications, including four concerned with the geology of natural gas.

[fol. 11013] Written Testimony of Glenn C. Bartle.

Preliminary Statement:

I have been acquainted with the properties of Panhandle Eastern Pipe Line System since 1928. I did my first work for this System in June, 1929, as a Consulting Geologist, working at first in the gas fields near Kansas City at Paola, Kansas, and Blue Springs and Excelsior Springs, Missouri.

I first went to the Hugoton Field in 1931. Since that time I have been consulted frequently by the management of this Company and have represented them both in the field and in their own office. Also I have advised the field superintendents on the setting of pipe, the proper correlation of geological formations and related geological problems. I have estimated the reserves in various portions of the Hugoton Field for the management. I am the author of several scientific papers, including two dealing with the Hugoton Field, in which two papers I collaborated with Mr. Rufus Smith, the Company Geologist, using data, much of which came from the files of the Panhandle Eastern Pipe Line Company. In general, I have kept in constant contact with the operations of this Company and the producing conditions in the area of the Hugoton Field.

In the testimony which follows, I shall deal with geological and production conditions in the general area commonly known as the Hugoton Gas Field.

[fol. 11014] Description of Field:

The ultimate limits on the Hugoton Field are not as yet definitely known. I have indicated the probable boundaries on all sides, on the rock pressure and open flow maps, hereafter discussed, by a broken line. No dry hole has been drilled within this area. The field as indicated includes an area:

(a) In Kansas:

About 65 miles long North and South;  
from 25 to 40 miles wide East and West.

(b) In Oklahoma:

About 35 miles long North and South and  
from 30 to 40 miles wide East and West, and

(c) In Texas:

About 30 miles long North and South and  
from 12 to 30 miles wide East and West.

This makes a total field, as shown on exhibits, about 130 miles long North and South and from 12 to 40 miles wide East and West.

The total area within the broken line is approximately 2,540,000 acres.

No oil in commercial quantities has been found. Within this area there are now approximately 278 producing gas wells connected to pipe lines and about 40 other wells which showed gas in their drilling records but which were drilled for oil or are remote from pipe lines and are not now connected.

[fol. 11015] The producing formations are composed of limestones and shales of the Big Blue Series of the Permian System, found at depths between 2400 and 2900 feet below the surface of the ground or at an elevation of 100 to 800 feet above sea level.

#### Discoveries of Gas:

Gas was found:

- (a) near Liberal in Seward County, Kansas, in 1922;
- (b) near Texhoma in Texas County, Oklahoma, in 1923;
- (c) near Guymon in the same County in 1925;
- (d) near Hugoton in Stevens County, Kansas, in 1927;

- (e) near Santa Fe in Haskell County, Kansas, in 1931,  
and  
(f) near Holcomb in Finney County, Kansas, in 1932.

These six areas were at first thought to be separate gas fields, and were named for those nearby communities. These various areas are now recognized as being parts of a common pool known as the Hugoton Gas Field.

The development of the field has been slow, its growth dependent largely on the development of far distant markets. Small pipe lines were built

by the Argus Pipe Line Company to Dodge City, Kansas, in 1931;

by the Tri-County Gas Company to Scott City, Kansas, in 1937, and

by the Central Gas Utilities to Lamar, Colorado, in 1928.

The two chief markets, however, since 1932 are provided by the Northern Natural Gas Company, which transports gas to Omaha, Minneapolis and other communities principally in Iowa and Nebraska, and the Panhandle Eastern Pipe Line Company with its various market outlets in Kansas, Missouri, Illinois, Indiana, Ohio and Michigan.

#### Panhandle Eastern Activities:

Panhandle Eastern started buying leases in the Hugoton Field early in 1928. Over the period of the last 11½ years it has gradually built up its acreage reserve through leasehold and gas purchase contracts to that shown on the 1941 acreage map, Exhibit 20 hereafter referred to.

The first drilling in the Hugoton Field was on an individual farm basis with drilled tracts usually not larger than 160 acres per well. Convinced that economic development of the territory did not require the drilling of a well on such small tracts, the Company in 1932 inaugurated the policy of drilling itself and recommending under

prospective gas purchase contracts the drilling of not more than one well per section. This policy is still being followed. Through this more land-owners have shared in the royalty return and the economic development of the field will require the drilling of fewer wells.

Consolidations of leases to carry out this policy have been made by the Company and by other operators with whom it holds gas purchase contracts. While a few tracts have been dropped from the lease portfolio because of inability to perfect such agreements, the amount of acreage under control of the Company has consistently grown. The Company's acreage thus selected is recognized as favorably located. Very little acreage has been dropped because of poor prospects for gas.

[fol. 11017] At present this Company has under its control:

1. In Kansas:

(a) 19,170.95 acres, which it owns 100% leasehold interest and on which it has drilled wells;

(b) 71,096.40 acres which it owns 100% leasehold, but which is as yet undrilled;

(c) 17,320.00 acres which is 50% Company-owned and entirely covered by gas purchase contracts, and on which it has drilled wells, and

(d) 35,075.00 acres owned by other producers covered by gas purchase contracts for the life of commercial production.

2. In Oklahoma:

79,224.00 acres leasehold interest.

3. In Texas:

23,396.30 acres.

This makes a total controlled by this Company in the Hugoton Field of 245,282.65 acres.



### Producing Wells:

Panhandle Eastern's main gathering system is now connected to 137 wells in the Kansas part of the Hugoton Field, of which 33 are 100% Company-owned; 34 are 50% Company-owned but entirely covered by gas purchase contracts and 70 owned by other producers are under gas purchase contract to Panhandle Eastern for the life of commercial production.

### [fol. 11018] Discussion of Acreage Map:

On the 1941 acreage map, Exhibit 20, this acreage is shown in the following classifications:

- (a) Those tracts marked in pink are 100% Company owned;
- (b) those tracts marked in pink below and yellow above are 50% Company owned with gas purchase contracts covering the entire production;
- (c) those tracts marked in green are under gas purchase contracts;
- (d) those tracts owned in whole or in part by Panhandle Eastern but which are under contract to the Argus Pipe Line Company marked as follows:
  - (1) those in yellow below and pink above are 50% Company owned and 50% owned by others;
  - (2) those in green with a pink border are 100% Company owned.

### Hugoton Structure:

Exhibit No. 32 shows the structural geological conditions in that part of the Hugoton Field located in the nine southwestern counties of Kansas and in Texas County, Oklahoma. I prepared this map with the assistance of Mr. Rufus M. Smith, Geologist with the Panhandle Eastern Pipe Line Company, early in 1939. It was published

in connection with an article entitled "The Hugoton Gas Field of Oklahoma and Kansas" written by us, which was printed in the Mines Magazine in August and September, 1940. This map shows accurately the structural conditions in this field as we knew them to exist in 1939 [fol. 11019] through a study of 322 wells. Drilling since that date confirms the accuracy of this study.

On this map contours are drawn on the top of the Herington limestone and all elevations are based on a sea level datum. The Herington limestone is the uppermost gas bearing formation in the Hugoton field and is readily identified by its lithologic characteristics so that it makes an ideal horizon marker for comparison of formations from one well to another.

As may be seen on this Exhibit, the Herington limestone is found at an elevation of over eleven hundred feet in a well in Western Morton County but it is only about three hundred feet above sea level near Liberal in Seward County or Sublette in Haskell County. The wells east of Hardesty in Texas County are still lower on the structure with the Herington found as low as 200 feet in elevation above sea level.

The structure shown by the contour lines on this map is a monocline dipping eastward at the rate of about 15 feet per mile. There are minor irregularities of this general eastward dip, as shown by the closure of the eight hundred foot contour line near Rolla, Kansas, and a slight nosing of the four hundred foot contour near Lawson, but these structural irregularities are unimportant in comparison with the definite general structure.

The structural contours on this map are quite different from those found over most oil and gas fields, where structural contours close around sharp anticlinal folds. It is quite evident that in the Hugoton field the entrapment of gas has not been caused by the folding of the formations.

[fol. 11020] Geologic Cross Section:

Exhibit No. 33 shows the cross section of the producing formations and the known formations below the same in

the Hugoton field. The formations above the Herington limestone are not shown. The top of the cross section is the top of the Herington limestone, not the surface of the ground.

The formations above the Herington in this area consist of highly colored shales and sandstones, and salt and gypsum beds which are interesting and important to a geologist but are not important in a consideration of the gas reserves. At the surface of the ground loose gravels and sands obliterate all other geological formations, leaving no outcropping ledges whatsoever. It is impossible therefore to determine the geological conditions by direct observation, except by correlation after careful study of the well cuttings.

The formations immediately below the Herington limestone consist of alternating limestones and shales also of the Big Blue Series of the Permian System. In their order below the Herington they are known as the Krider, the Winfield, the Towanda, the Fort Riley and the Florence limestones. They have been correlated from well to well using the names adopted by the United States Geological Survey and the Kansas Geological Survey for the outcropping formations of this age in south central Kansas. It is not claimed that these formations in the wells are exact time equivalents to those on the outcrop, near Wichita. It is my belief, however, that they are approximately equivalent to the outcropping formations and that [fol. 11021] they are accurately correlated with respect to each other, from well to well, which is the purpose of this study.

The cross sections therefore show a picture of a great slice through the producing formations of the Hugoton Field. The North-South Cross Section A-A' is taken from a point near Lakin in Kearney County, Kansas, to a point near Texhoma in Texas County, Oklahoma. It shows the actual record of the formations encountered in thirty-one wells. The West-East Cross Section B-B' is taken from a point in Western Morton County to a point in Central Seward County, Kansas. It shows the actual record of the formations encountered in eighteen wells.

The location of these two cross sections is shown on the Structure Contour Map—Exhibit 32.

The gas record of the wells on these cross sections is given whenever such record is available. Red dots indicate the spots where the drillers' log shows gas to have been encountered. At the base of the drawing of each drilled well a figure is given showing the thickness of the gas pay and the initial open flow of the well. The name and the location of each well is indicated just above the cross section.

In some cases only the first important gas was shown on the drillers' log and therefore only one red spot appears on the cross section. In many of these wells, however, other substantial volumes of gas were encountered at lower elevations. These are not shown because we do not have the record of the same.

Most wells have a showing of gas in the Herington limestone and an increase in the Krider and Winfield lime- [fol. 11022] stones. Many wells show important production in the Towanda, Fort Riley and Florence limestones but it is rare to find important gas below the Florence. It will be noticed that some increases of gas are to be found at the contact of the limestones and the intervening shales.

Some wells encounter salt water at horizons below the Florence and this deeper drilling of wells may make it necessary to plug back the hole to a point just below the lower-most important gas.

The presence of gas in this field is not due to an anti-clinal fold but to conditions of porosity in various members of the Big Blue Series,—sometimes one, sometimes another. In general the formations west of the Hugoton Field are less porous and composed more often of substantially impervious shales and red beds, instead of limestones. Within the field itself there are variations in porosity, possibly due to the dissolving action of underground water in previous geological ages. The porous phases of the limestones at the point of contact with shales is indicative of this type of geological history.

It is improbable that the gas was formed from the limestones and pink shales which make up its present reservoir. Since dark bituminous shales are more probable sources of gas, most geologists believe that the gas originated in the Anadarko Basin of Oklahoma, toward the southeast, or the Dodge City Basin of Kansas, toward the northeast and migrated up dip into such formations as were porous in the Hugoton area. This migration of gas was stopped by the impervious formations at the same horizons towards the west.

[fol. 11023] The cross sections show the formations encountered in a few deep wells, there has been no effort to correlate these lower formations. Deeper drilling has not been successful in the Hugoton field.

#### Open Flow and Pay Thickness:

The "pay thickness" is not the whole amount of the formation shown on the cross section. It is an accumulation of relatively small amounts which are porous and actually contain gas as shown by the drillers' logs. This pay thickness is sometimes difficult to estimate by an experienced driller when there is a large quantity of gas in the hole as drilling is progressing. I have estimated this actual pay thickness by adding the total amounts of formations which cause increases in the open flow of the drilling well.

A curve has been constructed under my direct supervision showing the relation of gas pay thickness to initial open flow for wells in the Hugoton Gas Field. This curve is Exhibit No. 34. Prior to the preparation of this curve, a careful study was made of the logs of forty-five wells in the Hugoton Field. The wells selected are those in which the drillers' record was most carefully kept regardless of the ownership of the wells. Each of these forty-five wells has been spotted on the graph with the gas pay thickness shown as the vertical coordinate and the initial natural open flow volume as the horizontal coordinate.

It will be observed that these wells so plotted fall along a fairly constant curved line, demonstrating that a very close relationship exists between the initial open flow and [fol. 11024] the gas pay thickness.



I have also had prepared under my direct supervision a productivity chart showing the relation of gas pay thickness to initial natural open flow for representative wells in the Hugoton Field. This productivity chart; Exhibit No. 35, shows individual records of twenty-eight wells plotted with the gas pay thickness as the vertical coordinate and the initial natural open flow volume as the horizontal coordinate for each well. While some variations may be observed, yet when compared with variations on a similar chart of the Panhandle Field presented by Mr. Smith, a more general uniformity is observed in the Hugoton Field. This chart and graph make it clear that there is a more general uniformity in porosity and permeability in the Hugoton Field than in the Texas-Panhandle Field.

As heretofore stated, the production in the Hugoton Field comes only from limestones and limestone-shale contact formations. There is no granite wash or other highly variable formation in the Hugoton Field.

#### Reserve Pressure Reservoir:

The original pressure in the Hugoton Field varied from 432 to 440 pounds per square inch well-head pressure. We have used 435 pounds as an average pressure for this field. I have prepared a series of maps showing the decline of rock pressure in this area since 1932. I have used in all of these maps the present boundary line of the field as we now know it, not as it was known as of those previous dates. In the area which has not been drilled I am showing the pressure as above 430 pounds.

[fol. 11025] The upper portion of Exhibit No. 23 shows the rock pressure as known in the Hugoton Field in 1932. It is a part of the same exhibit used in the Texas-Panhandle Field and the same general coloring system has been used. Since it is possible to contour these pressure bands in Hugoton on a 10 pound differential, shades of the colors used on the Panhandle pressure maps have been used. In 1932 all of the Hugoton area was above 410 pounds, but as corresponding to the yellow color on the Panhandle map I have used one shade of yellow on the Hugoton map for the area above 430 pounds, an-

other for the area between 420 and 430 and still another for the area between 410 and 420.

It must be understood that these three shades of yellow taken together correspond to the yellow area shown on the Panhandle map and that the blue, green and gray colors of the lower pressure bands on the Panhandle map are not represented in any way on the Hugoton map since no such pressures then existed there.

An analysis of the gas pressure decline on the 1932 rock pressure map shows that there then was an area of 53,756 acres having pressures below 435 pounds. The average pressure of that area weighted with respect to group acreage was on July 1, 1932, 426.43 pounds per square inch well-head pressure.

Accumulated withdrawals of gas up to July 1, 1932, was 11,264,879,000 cubic feet of metered gas. The estimated amount of unmetered gas withdrawals up to July 1, 1932, is 4,038,198,000, making a total withdrawal from the Hugoton Field to that date of 15,303,077,000 cubic of gas. This indicates a withdrawal per pound decline in pressure of 1,785,657,000 cubic feet of gas, and a total initial reserve in the area of withdrawal of 77,760,795,000 [fol. 11026] cubic feet. It further indicates that the wells were withdrawing gas as if they were producing from a calculated initial reserve per acre of 14,450,000 cubic feet.

#### 1938 Pressure Map:

The rock pressure map of the Hugoton Field for 1938 is shown on the upper portion of Exhibit No. 24. The pressures shown thereon are those existing at the expiration of six years from the date used for Exhibit No. 23. By that time pressures had declined to less than 400 pounds in eight small areas, which are shown in blue color. The areas between 400 and 410 pounds, between 410 pounds and 420 pounds, and between 420 and 430 pounds had extended materially beyond those shown on the 1932 map.

359,872 acres were in the region showing withdrawals.

The pressures in the areas of withdrawals when weighted as in 1932, averaged 417.68 pounds per square

inch. This made an average decline from virgin pressure of 17.32 pounds. The cumulative withdrawals by July 1, 1938, were 138,002,621,000 cubic feet of metered gas with an estimated withdrawal of 8,955,827,000 cubic feet of unmetered gas, making a total of 146,958,448,000 cubic feet of withdrawals during the period of the pressure decline of 17.32 pounds. This made an estimated yield per pound drop of 8,484,899,000 cubic feet for the withdrawn area and a total calculated initial reserve of 3,690,931,065,000 cubic feet for the area. The wells were behaving as if they were withdrawing gas from the initial reserve of 10,256,000 cubic feet per acre.

[fol. 11027] This calculated reserve is somewhat less than that calculated on the basis of the information available in 1932.

#### 1939 Pressure Map:

The rock pressure map for the Hugoton Field for 1939 is shown on the upper portion of Exhibit No. 25. The map reflects withdrawals from a wider area than that shown on Exhibit 24. Two new low pressure areas below 390 pounds are shown on this map and they are indicated by a different shade of blue. Pressures were also further reduced generally throughout the area of withdrawal below those shown on the 1938 map.

Based on the pressures existing in July, 1939, the average pressure weighted with respect to acreage as for former years was 418.27 pounds per square inch. This was in fact slightly higher than the average pressures existing in the areas of withdrawal used in preparing the map of 1938. This was due to the circumstance that as a result of additional development the area of withdrawal was extended during the twelve month period.

The cumulative withdrawals as of July 1, 1939, were 170,040,132,000 cubic feet of metered gas and 9,504,022,000 cubic feet of unmetered gas, making a total withdrawal of 179,544,154,000 cubic feet. The tests of July 1, 1939, showed that pressures had declined an average of 16.73 pounds. There was therefore a production of 10,731,868,000 cubic feet per pound decline in pressure, representing a total calculated initial reserve of 4,668,362,-

580,000 cubic feet and a calculated initial reserve per acre of 10,241,000 cubic feet for the areas of withdrawal.

[fol. 11028] 1940 Pressure Map:

The 1940 pressure map of the Hugoton Field is shown on the upper portion of Exhibit 26. The blue areas are shown to be increasing in size and number and the pressures in the other producing portions of the field are shown to be further declining. The average pressure in the areas of withdrawal, weighted as for the previous years, was 416.32 pounds. This represented a pressure decline of 18.68 pounds. During the period of decline in pressure there was a cumulative withdrawal of 206,936,262,000 cubic feet of metered gas and an estimated withdrawal of 10,263,154,000 cubic feet of unmetered gas, making a total withdrawal of 217,199,416,000 cubic feet. This represents an estimated production per pound drop in pressure of 11,627,378,000 cubic feet and a total calculated initial reserve of 5,057,909,430,000 cubic feet for the area of withdrawal. The wells were behaving as if they were withdrawing gas from the initial reserve of 9,568,000 cubic feet per acre.

1941 Pressure Map:

The 1941 pressure map of the Hugoton Field is shown on the upper portion of Exhibit 27. The blue area has been enlarged from that shown on the 1940 map. (there being now four shades of blue). Pressures in other producing areas have likewise farther declined.

The average pressure (weighted as in the other years) was on July 1, 1941, 410.53 pounds. The cumulative withdrawals of metered gas were 244,841,333,000 cubic feet and the unmetered gas 10,909,355,000 cubic feet, making [fol. 11029] a total withdrawal of 255,750,688,000 cubic feet.

This indicates a withdrawal per pound decline in pressure of 10,451,601,000 cubic feet, a total calculated reserve in the area of withdrawal of 4,546,446,435,000 cubic feet, and a calculated reserve per acre in the area of withdrawal of 9,722,000 cubic feet.

Thus it appears that after a period of time the calculated per acre reserve is now more nearly stabilized as

a result of including in the computations a larger producing area and the use of cumulative withdrawals and cumulative average pressure declines over longer periods of time.

On Exhibit 36, Schedule 1, Pages 1, 2, and 3, I have shown the data forming the basis of calculated per acre reserves as indicated from the information available on July 1, 1932, 1938, 1939, 1940, and 1941, respectively.

#### Porosity and Sand Thickness:

I have calculated the reserves of the Hugoton Field using as a basis for that calculation my judgment as to the average sand thickness and average porosity of the producing formations in the field. In this computation I have used 40.4 feet as the average thickness of pay and 18.6% as the average porosity. The use of 40.4 as average thickness of pay is supported by the well logs to which I have had access. A careful check of those logs covering the wells in the field which contain good records of the producing formations, shows that the approximate average thickness of pay is 40.4 feet.

[fol. 11030] In studying the producing history of 183 wells in the field and their logs, I reached the conclusion that wells having the pay thickness found in the logs of those wells would produce as those wells had produced with an average porosity of approximately 18.6%.

The studies made by me since that determination have confirmed that view.

Using 18.6% as the porosity factor and 40.4 feet as the average pay thickness and 478 pounds as the initial reservoir pressure at the sand face, I arrived at the amount of gas in place under the areas of withdrawals in the Hugoton Field at 9,541,000 cubic feet per acre. Since the size and limits of the Hugoton Field have not been determined, I have made no estimate of the original content of the field.

#### Panhandle Eastern Reserves:

On Exhibit 36, Schedule 3, Page 1, I show my estimate of the original content in those portions of Panhandle Eastern's reserves in the Hugoton Field other



than the reserves on which Argus Natural Gas Company has first call. This content computed at 9,541,000 cubic feet per acre, was 2,340,241,763,000 cubic feet. The content has on said schedule been segregated as to States in which the acreage is located and according to ownership and gas purchase contracts.

#### Remaining Reserves:

On Exhibit 36, Schedule 3, Pages 2 and 3, I show my estimate of the gas remaining in the reserves of Panhandle Eastern Pipe Line Company (other than the acreage on which Argus Natural Gas Company has first call) [fol. 11031] as of July 1, 1941. The information shown on that page is self-explanatory. Due account has been taken of all prior production, metered and unmetered, and calculations have been made at abandonment pressures of 150 pounds, 125 pounds, 100 pounds, 75 pounds, 50 pounds, 30 pounds, 25 pounds, and 0 pounds, respectively, and on Pages 2 and 3 of Exhibit 2 the gas remaining at each of these pressures is shown on the basis of both a 100% recovery and on the application of a 90% recovery factor.

#### Unmetered Gas:

Exhibit 36, Schedule 2, is an estimate of the unmetered gas which has been produced from the wells connected to Panhandle Eastern's pipe line. It does not show the unmetered gas produced from Panhandle Eastern's lines which are connected to the pipe line of Argus Natural Gas Company.

Exhibit 36, Schedule 4, Page 1, is my estimate of the unmetered gas which has been produced from Panhandle Eastern's lines which are connected to Argus National Gas Company.

#### Content of Argus Acreage:

On Exhibit 36, Schedule 4, Page 2, is my estimate of the original content of the acreage constituting reserves of Panhandle Eastern from which gas is furnished to Argus Natural Gas Company. This original content is estimated at 102,545,809,000 cubic feet on the basis of 9,541,000 cubic feet per acre.

### Remaining Content Argus Acreage:

Exhibit 36, Schedule 4, Pages 3 and 4, is my estimate of the gas remaining on July 1, 1941, in the acreage constituting the reserves of Panhandle Eastern Pipe Line Company for which gas is furnished to Argus Natural Gas Company, computed at abandonment pressures of 150 pounds, 125 pounds, 100 pounds, 75 pounds, 50 pounds, 30 pounds, 25 pounds, and 0 pounds, respectively. This tabulation shows the reserves remaining at those abandonment pressures both at a 100 percent recovery and on the application of a 90 percent recovery factor. It is my opinion that the estimated remaining gas content under the acreage constituting the reserves of Panhandle Eastern Pipe Line Company shown on Pages 2 and 3 of Schedule 3, and Pages 3 and 4 of Schedule 4, is reasonable as an estimate for the content at the respective pressures shown on those schedules.

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[fol. 11033] Schedules Presented in Connection With  
The Testimony Of Glenn G. Bartle

Estimated Original Gas Content In The Hugoton Field (Kansas, Oklahoma And North Texas Panhandle) Under Acreage Constituting Reserves Of Panhandle Eastern Pipe Line Company As Of July 1, 1941, Press. Base 16.4# Abs.

Line No.	(A)	Acreage (B)	Number of Wells (C)	Cumulative Prod. to 6/22/41 MCF (D)	Unmetered Withdrawal to 6/22/41 MCF (E)	Original Amount of Gas at 04 - 9,541 MCF Per Acre (F)
1	Kansas					
2	100% Company Owned and Drilled	19 179 95	33	22 041 457	1 082 083	182 910 034
3	100% Company Owned but Undrilled	71 096 40				678 330 752
4	50% Company Owned and Drilled and					
5	50% Purchased	17 320 00	34	21 594 619	1 080 583	165 250 120
6	Acreage Under Gas Purchase Con- tracts	35 075 00	70	34 049 502	2 228 651	334 650 575
7	Oklahoma					
8	100% Company Owned but Undrilled	79 224 00				755 876 184
9	Texas (Sherman and Hansford Counties)					
10	100% Company Owned but Undrilled	23 396 30				223 224 098
11	Total	245 282 65	137	77 685 578	4 321 317	2 340 241 763

Note: No. 1

This tabulation does not include reserves from which gas purchased from Cimarron Utilities Company is delivered to Panhandle Eastern Pipe Line Company at a point near Baker, Oklahoma. Panhandle Eastern Pipe Line Company has little information with respect to those reserves.

No. 2

This tabulation does not include reserves of Panhandle Eastern Pipe Line Company.

**Estimated Remaining Gas Content In The Hugoton Field (Kansas, Oklahoma and North Texas Panhandle) Under Acreage Constituting Reserves Of Panhandle Eastern Pipe Line Company As Of July 1, 1941. Press. Base 16.4# Abs.**

Line No.	(A)	Original Amount of Gas	Abandonment		Pressures — MCF			
			150#		100#			
			63.6%	90.0%	69.2%	90.0%	74.7%	90.0%
		(B)	(C)	(D)	(E)	(F)	(G)	(H)
1	Kansas							
2	100% Company Owned and Drilled	182 910 034	116 330 782	104 697 704	126 573 744	113 916 370	136 633 795	122 970 416
3	Deduct — Production to June 22, 1941			22 041 456		22 041 456		22 041 456
4	Deduct — Unmetered to June 22, 1941			1 082 083		1 082 083		1 082 083
5	Net Amount			81 574 165		90 792 831		99 846 877
6	100% Company Owned but Undrilled	678 330 752	431 418 358	388 276 522	469 404 880	422 464 392	506 713 072	456 041 765
7	50% Company Owned and Drilled and							
8	50% Purchased	165 250 120	105 099 076	94 589 168	114 353 083	102 917 775	123 441 840	111 097 656
9	Deduct — Production to June 22, 1941			21 594 619		21 594 619		21 594 619
10	Deduct — Unmetered to June 22, 1941			1 080 303		1 080 303		1 080 303
11	Net Amount			71 914 246		80 242 853		88 422 734
12	Acreage Under Gas Purchase Contract	334 650 575	212 837 766	191 553 989	231 578 198	208 420 378	249 983 980	224 985 582
13	Deduct — Production to June 22, 1941			34 049 502		34 049 502		34 049 502
14	Deduct — Unmetered to June 22, 1941			2 228 651		2 228 651		2 228 651
15	Net Amount			155 275 836		172 142 225		188 707 429
16	Total Amount — Kansas	1 361 141 481	865 685 982	697 040 769	941 909 905	765 642 301	1 016 772 687	833 018 805
17	Oklahoma							
18	100% Company Owned but Undrilled	755 876 184	480 737 253	432 663 528	523 066 319	470 759 087	564 639 509	508 175 558
19	Texas (Sherman and Hansford Counties)							
20	100% Company Owned but Undrilled	223 224 098	141 970 526	127 773 473	154 471 076	189 023 968	166 748 401	150 073 561
21	Totals	2 340 241 763	1 488 393 761	1 257 477 770	1 619 447 300	1 375 425 956	1 748 160 597	1 491 267 924
22	Total — Company Owned — Drilled and Undrilled			1 339 554 384		1 457 502 570		1 573 344 538
23	Deduct — Total Production to June 22, 1941			77 685 577		77 685 577		77 685 577
24	Deduct — Total Unmetered to June 22, 1941			4 391 037		4 391 037		4 391 037
25	Net Total Amount			1 257 477 770		1 375 425 956		1 491 267 924

## Constituting Reserves Of Panhandle

## Pressures — MCF.

100#		75#	
74.7%	90.0%	80.3%	90.0%
(G)	(H)	(J)	(J)
136 633 795	122 970 416 22 041 456 1 082 083	146 876 757	132 189 081 22 041 456 1 082 083
	99 846 877		109 065 542
506 713 072	456 041 765	544 699 594	490 229 635
123 441 846	111 097 656 21 594 619 1 080 303	132 695 846	119 426 261 21 594 619 1 080 303
	88 422 734		96 751 339
249 983 980	224 985 582 34 049 502 2 228 651	268 724 412	241 851 971 34 049 502 2 228 651
	188 707 429		205 573 818
016 772 687	833 018 805	1 092 996 609	901 620 334
564 639 509	508 175 558	606 968 576	546 271 718
166 748 401	150 073 561	179 248 951	161 324 056
1 748 160 597	1 491 267 924	1 879 214 136	1 609 216 108
	1 573 344 538 77 685 577 4 391 037		1 691 292 722 77 685 577 4 391 037
	1 491 267 924		1 609 216 108



Estimated Remaining Gas Content In The Hugoton Field (Kansas, Oklahoma And North Texas Panhandle) Under Acreage Contract  
Eastern Pipe Line Company As Of July 1, 1941. Press. Base 16.4# Abs.

Line No.	(A)	Original Amount of Gas (B)	Abandonment Pressures — MCF					
			50#		30#		25#	
			86.0%	90.0%	90.4%	90.0%	91.4%	90.0%
		(C)	(D)	(E)	(F)	(G)	(H)	
1	<u>Kansas</u>							
2	100% Company Owned and Drilled	182 910 034	157 302 629	141 572 366	165 350 671	148 815 604	167 179 771	150 461 794
3	Deduct — Production to June 22, 1941			22 041 456		22 041 456		22 041 456
4	Deduct — Unmetered to June 22, 1941			1 082 083		1 082 083		1 082 083
5	Net Amount			118 448 827		125 692 065		127 338 255
6	100% Company Owned but Undrilled	678 330 752	583 364 447	525 028 002	613 211 600	551 889 900	619 994 307	557 994 876
7	50% Company Owned and Undrilled and							
8	50% Purchased	165 250 120	142 115 103	127 903 593	149 386 108	134 447 497	151 038 610	135 934 749
9	Deduct — Production to June 22, 1941			21 594 619		21 594 619		21 594 619
10	Deduct — Unmetered to June 22, 1941			1 080 303		1 080 303		1 080 303
11	Net Amount			105 228 671		111 772 575		113 259 827
12	Acreage Under Gas Purchase Contract	334 650 575	287 799 495	259 019 546	302 524 120	272 271 708	305 870 626	275 283 563
13	Deduct — Production to June 22, 1941			34 049 502		34 049 502		34 049 502
14	Deduct — Unmetered to June 22, 1941			2 228 651		2 228 651		2 228 651
15	Net Amount			222 741 393		235 993 555		239 005 410
16	Total Amount — Kansas	1 361 141 481	1 170 581 674	971 446 893	1 230 471 899	1 025 348 095	1 244 083 314	1 037 598 368
17	<u>Oklahoma</u>							
18	100% Company Owned but Undrilled	755 876 184	650 053 518	585 048 166	683 312 070	614 980 863	690 870 832	621 783 749
19	<u>Texas (Sherman and Hansford Counties)</u>							
20	100% Company Owned but Undrilled	223 224 098	191 972 724	172 775 452	201 794 585	181 615 127	204 026 826	183 624 143
21	Totals	2 340 241 763	2 012 607 916	1 729 270 511	2 115 578 554	1 821 944 085	2 138 980 972	1 843 006 260
22	Total — Company Owned — Drilled and Undrilled			1 811 347 125		1 904 020 699		1 925 082 874
23	Deduct — Total Production to June 22, 1941			77 685 577		77 685 577		77 685 577
24	Deduct — Total Unmetered to June 22, 1941			4 391 037		4 391 037		4 391 037
25	Net Total Amount			1 729 270 511		1 821 944 085		1 843 006 260

xas, Panhandle) Under Acreage Constituting Reserves Of Panhandle  
base 16 4# Abs.

resses—MCF.

25#		0#	
94 4'	90 0'	97 1'	90 0'
(G)	(H)	(I)	(J)
167 179 771	150 461 794 22 041 456 1 082 083	177 605 643	159 845 079 22 041 456 1 082 083
	127 338 255		136 721 540
619 994 307	557 994 876	658 659 160	592 743 244
151 038 610	135 934 749 21 594 619 1 080 393	160 457 867	144 412 080 21 594 619 1 080 393
	113 259 827		121 737 158
305 870 626	275 283 563 34 049 502 2 228 651	324 945 708	292 451 137 34 049 502 2 228 651
	239 005 410		256 172 984
1 244 083 314	1 037 598 368	1 321 668 378	1 407 424 926
690 870 832	621 783 749	733 955 775	660 560 199
204 026 826	183 624 115	216 750 599	195 075 539
2 138 980 972	1 843 006 260	2 272 374 752	1 963 060 663
	1 925 082 874 77 685 577 4 391 037		2 045 137 277 77 685 577 4 391 037
	1 843 006 260		1 963 060 663

Estimated Unmetered Gas From Panhandle-Eastern Pipe Line Company  
Wells In The Hugoton Field Kansas  
Connected To Argus Natural Gas Company, Inc.  
As Of July 1, 1941  
Pressure Base 16.4# Absolute

Unmetered — MCF

Line No.	(A)	Number Producing Wells (B)	Drilling In @ 24,500 (C)	Conditioning @ 1,167 Per Year (D)	Testing @ 140 Per Year (E)	Total (F)
1	Kansas					
2	50% Owned	12	294 000	112 032 (1)	13 440 (1)	419 472
3	50% Owned	6		14 004 (2)	1 680 (2)	15 684
4	Total — 50% Owned	12	294 000	126 036	15 120	435 156
5	100% Owned	1	24 500	11 670 (3)	1 400 (3)	37 570
6	Total — Estimated					
7	Unmetered Gas	13	318 500	137 706	16 520	472 726
8	(1) 8 years					
9	(2) 2 years					
10	(3) 10 years					

Estimated Original Gas Content In The Hugoton Field Kansas  
Under Acreage Constituting Reserves Of  
Panhandle Eastern Pipe Line Company Furnishing Gas To  
Argus Natural Gas Co., Inc. As Of July 1, 1941  
Pressure Base 16.4# Absolute

M C F

Line No.	(A)	Acreage (B)	Number of Wells (C)	Cumulative Production To 6/30/41 (D)	Estimated Unmetered to 6/30/41 (E)	Original Amount at 0# (9,541 Per Acre) (F)
1	Kansas					
2	100% Owned and Drilled	400	1	1 057 025	37 570	3 816 400
3	100% Owned but Undrilled	800	—	—	—	7 632 800
4	50% Owned and Drilled	5 279.41	12	15 077 164	435 156	50 370 850
5	50% Owned but Undrilled	4 268.50	—	—	—	40 725 759
6	Totals	10 747.91	13	16 134 189	472 726	102 545 809

[fol. 11043]

Schedule 4  
Page 3

Estimated Remaining Gas Content In The Hugoton Field Kansas Under Acreage Constituting Reserves Of Panhandle Eastern Pipe Line Company Furnishing  
Gas To Argus Natural Gas Company, Inc., As Of July 1, 1941. Pressure Base 16.4# Absolute

Line No.	(A)	Original Amount of Gas MCF (B)	Abandonment Pressures—MCF							
			150#		125#		100#		75#	
			63.8% (C)	90.0% (D)	69.2% (E)	90.0% (F)	74.7% (G)	90.0% (H)	80.3% (I)	90.0% (J)
1	Kansas									
2	100% Company Owned and Drilled	3 816 400	2 427 230	2 184 507	2 640 949	2 376 854	2 850 851	2 565 766	3 064 569	2 758 142
3	Deduct — Production to June 30, 1941			1 057 025		1 057 025		1 057 025		1 057 025
4	Deduct — Unmetered to June 30, 1941			37 570		37 570		37 570		37 570
5	Net Amount			1 089 912		1 282 259		1 471 171		1 663 517
6	100% Owned but Undrilled	7 632 800	4 854 461	4 369 015	5 281 898	4 753 708	5 701 702	5 131 532	6 129 138	5 516 224
7	50% Owned and Drilled	50 370 850	32 035 861	28 832 275	34 856 628	31 370 965	37 627 025	33 864 323	40 447 793	36 403 014
8	Deduct — Production to June 30, 1941			15 077 164		15 077 164		15 077 164		15 077 164
9	Deduct — Unmetered to June 30, 1941			435 156		435 156		435 156		435 156
10	Net Amount			13 319 955		15 858 645		18 352 003		20 890 694
11	50% Owned but Undrilled	40 725 759	25 901 583	23 311 425	28 182 225	25 364 003	30 422 142	27 379 928	32 702 784	29 432 506
12	Totals	102 543 809	65 219 135	42 090 307	70 961 700	47 258 615	76 601 720	52 334 634	82 344 284	57 502 941
13	Total Drilled and Undrilled			58 697 222		63 865 530		68 941 549		74 109 856
14	Deduct — Total Production to									
15	June 30, 1941			16 134 189		16 134 189		16 134 189		16 134 189
16	Deduct — Total Unmetered to									
17	June 30, 1941			472 726		472 726		472 726		472 726
18	Total Net Amount			42 090 307		47 258 615		52 334 634		57 502 941



Estimated Remaining Gas Content In The Hugoton Field Kansas Under Acreage Constituting Reserves Of Panhandle Eastern Pipe Line Company Furnishing  
Gas To Argus Natural Gas Company, Inc., As Of July 1, 1941. Pressure Base 16.4# Absolute

\*Abandonment Pressures—MCF

Line No.	(A)	Original Amount of Gas MCF (B)	50#		30#		25#		0#	
			86.0% (C)	90.0% (D)	90.4% (E)	90.0% (F)	91.4% (G)	90.0% (H)	97.1% (I)	90.0% (J)
1	Kansas									
2	100% Company Owned and Drilled	3 816 400	3 282 104	2 953 894	3 450 026	3 105 023	3 488 190	3 139 371	3 705 724	3 335 152
3	Deduct — Production to June 30, 1941			1 057 025		1 057 025		1 057 025		1 057 025
4	Deduct — Unmetered to June 30, 1941			37 570		37 570		37 570		37 570
5	Net Amount			1 859 299		2 010 428		2 044 776		2 240 557
6	100% Owned but Undrilled	7 632 800	6 564 208	5 907 787	6 900 051	6 210 046	6 976 379	6 278 741	7 411 449	6 670 304
7	50% Owned and Drilled	50 370 850	43 318 931	38 987 038	45 535 248	40 981 723	46 038 957	41 435 061	48 910 095	44 019 086
8	Deduct — Production to June 30, 1941			15 077 164		15 077 164		15 077 164		15 077 164
9	Deduct — Unmetered to June 30, 1941			435 156		435 156		435 156		435 156
10	Net Amount			23 474 718		25 469 403		25 922 741		28 506 766
11	50% Owned but Undrilled	40 725 759	35 024 153	31 521 738	36 816 086	33 134 477	37 223 344	33 501 010	39 544 712	35 590 241
12	Totals	102 545 809	88 189 396	62 763 542	92 701 411	66 824 354	93 726 870	67 747 268	99 571 980	73 007 868
13	Total Drilled and Undrilled			79 370 457		83 431 269		84 354 183		89 614 783
14	Deduct — Total Production to									
15	June 30, 1941			16 134 189		16 134 189		16 134 189		16 134 189
16	Deduct — Total Unmetered to									
17	June 30, 1941			472 726		472 726		472 726		472 726
18	Total Net Amount			62 763 542		66 824 354		67 747 268		73 007 868



[fol. 11047]

(Exhibit 37.)

Introduction Market Value of Leases For Panhandle  
Eastern Pipe Line Company

My name is R. J. WALLACE. I reside in Dallas, Texas. I am Vice President of the Republic Natural Gas Company in charge of land and leaseholds and also in charge of gas production for the Hugoton District in Kansas. I was elected Vice President on October 1, 1940. Prior to October 1940, I have been operating independently as a producer of oil and gas and for many years past have conducted a brokerage business for the purchase and sale of oil and gas properties and leases in many parts of the Mid-Continent area.

In 1907, I went to work in the Osage reservation oil fields for the Lahoma Oil and Gas Company as a roustabout and night pumper.

In 1908 and 1909, I was employed by the Prairie Oil and Gas Company in their civil engineering department on tank construction and pipe line construction.

In 1909 until 1911, I attended college in winters and in summers worked at surveying, general oil field work and as a tool dresser on drilling wells.

In 1912, I was elected Register of Deeds for Washington County, Oklahoma, the county seat being Bartlesville. This county, at that time was one of the most active in oil and gas development and by far the largest percentage of instruments recorded consisted of all types of oil and gas leases, stipulations and contracts for leases.

In October 1913, I resigned as Register of Deeds and accepted the position of assistant superintendent of land and leaseholds of the Quapaw Gas Company and Associated Companies. This was the first large gas company operated at that time from northern Oklahoma. Later, these companies became the Empire Companies. My work consisted of acquiring and supervising the taking and purchase of oil and gas leases direct from landowners and brokers. As the company expanded, we acquired leaseholds in the States of Alabama, Mississippi, Arkansas, Louisiana, Texas, Oklahoma, Kansas, Colorado, Wyoming and Montana under my supervision.

In 1915 and until the latter part of 1919, I was attached to the production department of the gas division of the Empire Companies, and during that period was made superintendent of gas pipe lines in the Cushing Field, Oklahoma. At that time, this was the largest gas reserve in Oklahoma. In addition to this work, I purchased oil and gas production and acquired gas leases for the gas division.

In 1919 and through 1920, I was made manager of oil and gas operations in Louisiana for the joint account of the Empire Companies, the Barnsdall Oil Company and the H. V. Foster interests. My work consisted of the supervision of drilling wells and purchasing leases and selling leases to help finance the ventures. During the operations in Louisiana, the Empire Companies withdrew from the joint venture, leaving me with the Barnsdall and Foster interests, and in January 1921, I was transferred to Billings, Montana, as manager of oil and gas operations in the Rocky Mountain states. They formed a corporation [fol. 11049] named the Barnsdall-Foster Company and I was general manager of that company until the latter part of the year of 1924. I sold a 60% interest in the properties of Barnsdall-Foster Company to the Midwest Refining Company and they took over the operations and management of the properties.

The latter part of 1924, I resigned from the Barnsdall-Foster Company and organized a corporation named the Record Petroleum Company, in which I owned a substantial interest. This company operated in Montana as a leasing company, drilled wells on its own account and as drilling contractors. We sold an interest in a portion of the properties of the Record Petroleum Company to the Midwest Refining Company.

In 1926 and until 1928, I secured oil and gas leases and oil and gas permits on the Federal and State lands in the states of Montana, Wyoming and New Mexico for my own account. Also, during this period, the Texas Panhandle Field became quite active and I made several trips into that field, known as the Amarillo District, to acquaint myself with this activity and the value of leases.

In 1928, I disposed of a portion of my interests in the Rocky Mountain states and moved to Tulsa, Oklahoma, to

engage more actively in the brokerage business and in valuation and appraisal of oil and gas leases and oil and gas producing properties.

During the year 1929, I devoted practically the entire year to consummating two transactions. One was the sale of one-half interest in all of the undeveloped oil and gas leases, being approximately 492,000 acres in Oklahoma and Kansas, owned by Amarada Petroleum Company to [fol. 11050] the Dixie Oil Company. The consideration for this one-half interest was \$10,000,000.00. Also, I effected the merger of the McMann Oil Company to the Dixie Oil Company. This was a stock merger and the value set up at that time was approximately \$12,000,000.00.

In 1930 to 1932, I conducted a general brokerage business and also developed a new gas field on the eastern edge of Kansas City, Missouri. I drilled a number of gas wells and constructed a pipe line system and sold the gas to the American Pipe Line Company.

In 1932 to 1935, I sold the gas properties near Kansas City, Missouri, and in addition to my brokerage business. I was elected Vice President and General Manager of the Signal Oil Company and the Foster Oil Company, representing a bank. These companies were producing oil and gas in Kansas and Oklahoma and, as they had become indebted to the bank, it was necessary that they put the management under their direction.

In 1936, after drilling some additional wells and the farming out of leases of these companies on which wells were drilled that proved acreage retained, I sold the production and some of the undeveloped leases for enough to pay the bank's indebtedness, and then turned the companies back to their owners.

In 1936 and to 1938, I drilled a number of oil and gas wells in the Burton Field, Kansas, in which I owned a one-fourth interest. These wells were combination oil and gas wells and resulted in our building a casinghead gasoline plant on the property. The latter part of 1938, I sold my interest in the oil and gas properties and have retained the interest in the gasoline plant.

[fol. 11051] From 1938 until October 1, 1940, I was engaged entirely in the brokerage business and in valuation of oil and gas properties and leases.

During the years I was employed by various companies and operating independently as a broker, I have had occasion to acquire leases in the Texas Panhandle Gas Field and also in the Hugoton Gas Field in Kansas and Oklahoma. I first became acquainted with the Texas Panhandle Field during the early discovery of that field, and many thousands of acres of leases in the Texas Panhandle Field and in areas generally surrounding that field were acquired.

I have been requested to make a report setting forth the present market value of leases owned by the Panhandle Eastern Pipe Line Company, the same being located in the counties of Moore, Potter, Hutchinson and Carson of the Texas Panhandle Field, and in the counties of Sherman and Hansford, Texas, in an area lying between the generally accepted proven area of the Hugoton Field and the Texas Panhandle Field. Also, I have been requested to make a report setting out the market value of leases owned by the Panhandle Eastern Pipe Line Company in what is known as the Hugoton Gas Field located in the counties of Stevens, Morton and Grant, Kansas, and the Texas County, Oklahoma portion of the proven area of the Hugoton Gas Field.

It was necessary, in the preparation for this valuation of leases, for the writer to spend many weeks in the office of the company in Kansas City, Missouri, and in the field. The status of each lease, the consolidations of leases, the development requirements of each lease and the relationship to other leases, the subjection to outside drainage, [fol. 11052] the large amount of acreage held under one leasehold, the location as to the particular gas productive areas as indicated by wells drilled within those areas, the rock pressures, and the location of the acreage within the generally accepted proven sweet gas area have been some of the factors considered in arriving at the market value of these leases.

A very important factor shown in the leaseholdings, which is favorable to their value, is the result of a process of elimination and state of evolution the leases have gone

through, and the favorable contracts and consolidations whereby the construction costs or drilling costs have been reduced to a minimum.

The Texas Panhandle Field is recognized to be a proven gas field within a boundary line generally accepted. The field contains what is known as the sweet gas area and what is known as the sour gas area. The boundary line of the entire field is as follows:

Beginning near the Southeast corner of Hartley County, Texas, running in a Northwest circular direction to a point about 10 miles North of the Southwest corner of Moore County; thence running in a Northeasterly direction to a point near the Northeast corner of Moore County in Section 37, H. & G. N. R. R. Company Survey; thence in a general Southeasterly direction through Hutchinson County to a point near the Southeast corner of Hutchinson County; thence in a general Southeasterly direction through Carson, Gray and Wheeler Counties to a point [fol. 11053] about 8 miles East of the Town of Shamrock, Wheeler County, Texas; thence South and then running Northwest about 3 miles South of the Town of Shamrock, through Wheeler, Gray and Carson Counties to a point about 7 miles South of the Northeast corner of Potter County; thence in an irregular West, South and Southwest direction to a point near the center of Section 25, Block 5, of Gunter and Munson Survey where it follows what is assumed to be a fault in a Northwesterly direction through Potter County and a small portion of the Northeast corner of Oldham County and into Hartley County to the place of beginning.

The present defined limits contain approximately 1,450,000 acres of oil and gas lands. There is a generally accepted boundary within the proven area of approximately 1,000,000 acres of sweet gas lands, the balance being oil producing lands along the Northern boundary of said field and the sour gas lands located within the oil area, and also in the north and western part of the proven gas area in Hutchinson, Moore and Hartley Counties, Texas.

The leases of the Panhandle Eastern Pipe Line Company in the Panhandle Field, as valued in this report, fall



within the sweet gas area, with the exception of the leases in Sherman and Hansford Counties, Texas, which lie to the north of the proven field and are not yet fully proven for gas production but fall within a trend that has become very active in acquiring leases, for the reason that it is believed by many that this area will also be productive if the Hugoton Field and the Texas Panhandle Fields are found to be connected.

[fol. 11054] The Texas Panhandle Gas Field has passed through periods of great wastage of gas. Conservation legislation by the State of Texas and the serious efforts of the Texas Railroad Commission to enforce the legislation prohibiting waste has now resulted in substantially reducing the waste of gas blown to the air. At this time, less than 50,000,000 cubic feet of gas per day is being wasted, whereas, during the years of stripping gas for its gasoline content, it was estimated that in excess of 1,000,000,000 cubic feet per day was being blown to the air. The leases of Panhandle Eastern Pipe Line Company, however, were generally not within the area where stripping took place and, consequently did not suffer the immediate loss of rock pressure and open flow suffered by some other parts of the field.

From the beginning of active development of the oil pools in the Texas Panhandle Field in the year 1926, there was an excessive waste of gas. In the early days, of course, there was not an appreciable market for gas for light and fuel. Consequently, the gas at that time was of little or no value. Likewise, the market value of leases was very low. It was what was termed a "wild cat" area and the producing extent or boundaries of the field had not been determined.

Beginning about 1927, when some of the major gas transmission lines were being planned, the market value of leases in the gas area increased very rapidly. In the purchases of large amounts of acreage, prices were paid in excess of those paid for smaller individual tracts for the reason that the leases on the large tracts and well blocked leases were more attractive to the operators who had provided themselves with a market outlet. These original values paid were in the form of cash per acre, as [fol. 11055] well as certain definite obligations to drill and

develop many wells and to build pipe lines which constituted the major consideration for many leases.

In 1933, the Texas Legislature enacted a statute, commonly known as the "Stripping" law, under the operation of which the owners of gas wells were permitted to extract the gasoline content therefrom and blow the residue to the air. This had the effect of lowering the value of the leases for the reason that by 1934 it was estimated that in excess of 1,000,000,000 cubic feet of gas per day was being blown to the air. A large percentage of this gas was from the sweet gas area and from tracts adjacent to leases held by the gas pipe line companies.

In 1935, the Texas Legislature repealed the stripping law by the passage of House Bill No. 266, which prohibited the blowing into the air of any gas other than that gas which was produced with oil. Later, Senate Bill No. 407 was passed, authorizing the use of sour gas for the manufacture of gasoline, provided the residue was consumed in the manufacture of carbon black.

In studying the withdrawals over the past few years, although the increased use for carbon black has offset to a considerable extent the decrease in waste of gas to the air, present withdrawals of gas for carbon black manufacture are limited to sour gas and casinghead gas. This gas is produced in the sour gas area and in the oil producing area along the north boundary of the field.

Conservation legislation, as administered by the Texas Railroad Commission, has materially increased the market value of leases within the sweet gas area. Legislative and Railroad Commission policy has undoubtedly resulted in the creation of higher values, for the reason that a purchaser will now feel more confident of recovering a greater proportion of the gas underlying the land than would have been possible under former conditions.

In placing the Texas leases of the Panhandle Eastern Pipe Line Company in several classifications, consideration has been given the proximity to wells of certain open flows and rock pressures, the producing history of the wells and the locations of the leases with respect to the leaseholds of other companies with gas pipe lines. Con-

sideration also is given to the unusually favorable leases and the favorable contracts effecting a consolidation of leases. These factors, as well as others, were used in determining the value and classifications adopted herein.

With respect to consolidations of leases, special recognition must be given to the advantage of owning leases under this form of contract as compared to the value of separate and individual leases for the reason that under the consolidation contract the lessee is relieved from the uneconomic drilling of additional wells not necessary in order to obtain the gas, which additional wells might be required under the terms of each individual lease or be required by the implied covenants requiring development that have been read into the leases by our courts.

When a gas field is discovered or when it is suspected a gas field might exist in a certain area, many operators and brokers rush into that area and secure leases from the landowners. Ordinarily, each lease requires the drilling of a well or wells upon the lease or a payment of delay [fol. 11057] rentals which defers the drilling of the first well for a period of a year and during the primary term of said lease. An obligation is read into the lease by implication requiring lessee to protect the property against drainage, and to adequately develop the property. Therefore, in the absence of consolidations, if one company secures many separate leases it is faced with the obligation of drilling a well or wells on each separate lease or the payment of large sums of money as delay rentals, in order to hold or perpetuate the leased reserve. Consolidation of leases eliminates this large expenditure for drilling and delay rentals to a certain extent, and, therefore, adds substantial value to the leaseholds. It also permits the withdrawals to be made on a more equitable basis and thereby assures the landowner a more equitable return from the wells and, ultimately, a larger recovery and income from the field.

Many of the Panhandle Eastern leases have been consolidated. In other words, the leases have lost their original identity and the rights of the parties are determined by the provisions of the consolidation agreement, rather than by the provisions of the original leases.

It was necessary, in evaluating the leases of the Panhandle Eastern Pipe Line Company, to prepare the exhibit attached hereto which was prepared by me and entirely under my direction.

I have made a take-off of each separate lease. On it I have shown the date of the lease, the number of the lease, corresponding to the records of the Panhandle Eastern Pipe Line Company, the lessors' names and the name of the present owner. The county and state is shown; also a description of the lands covered by the lease, the number [fol. 11058] of acres, the royalty to be paid to the landowner and the terms and amount of delay rentals. In the event the lease has been consolidated with other leases, I have shown the lease numbers corresponding to those consolidated.

As to the drilled leases, I have shown the number of each well, the date completed, the original open flow, and the original rock pressure. Under "current gauge", I have shown the number of each well and the latest open flow test and rock pressure test, and the amount of gas (in MCF's) marketed from each well, as obtained from the records of the Panhandle Eastern Pipe Line Company.

I have reviewed each lease separately, and on the take-off sheets have made notations as to the productive area and pressure area in which the lands are located. This information I have acquired from being in the field and from the records and maps of the Panhandle Eastern Pipe Line Company and records which I have accumulated over a period of several years. I have placed each lease in a certain classification, or classifications, and have so noted on each sheet, and the value of each classification as that which, in my opinion, represents the present market value of leases from a willing seller to a willing buyer.

I have shown in this exhibit a summary or recapitulation of the total acreage in each classification and the total market value of leases in each classification and their totals.

I have included with those leases that have been consolidated, a brief of the consolidation contract.

[fol. 11059] The Oklahoma and Kansas leases owned by Panhandle Eastern Pipe Line Company were given the

same character of study as were its Texas leases, taking into account the different conditions existing.

The Hugoton Gas Field is located in the States of Kansas, Oklahoma, and possibly extends into Texas. It is an area which has not yet been completely defined, but from the gas wells now drilled, it has been proven the largest gas reserve, in total acres, discovered.

The Kansas portion of the Hugoton Gas Field consists of gas producing portions of Kearney, Finney, Grant, Haskell, Morton, Stevens, and Seward Counties; also, approximately the east two-thirds portion of Texas County, Oklahoma is included within the field. It is believed by many that portions of the Counties of Sherman and Hansford, Texas are part of the same field, however, the limits and extent of that field have not as yet been defined and determined.

The Hugoton Field is an enormous reservoir of natural gas, generally accepted as containing proven gas bearing acreage as follows:

Kansas	1,727,360 acres
Oklahoma	939,200 "
Texas	705,280 "
Total	3,371,840 "

The discovery well in the Hugoton Field was the Crawford No. 1, drilled by W. L. Sidwell of Winfield, Kansas, and located in Township 33, Range 37, Stevens County, Kansas. The original early development of the Hugoton Field was carried on by Mr. W. L. Sidwell and Mr. W. M. McNab. At the time of this early development, there were no pipe lines in this area and the nearest production of natural gas was from what is now known as the Texas Panhandle Field, approximately one hundred miles to the [fol. 11060] south.

During the years 1927 to 1930, inclusive, about 88 gas wells were drilled in the field and the only gas produced therefrom was used to serve local markets. Since that time, many additional gas wells have been drilled and, although the limits of the field are not yet defined, it is generally accepted as covering an area from North to South at least 105 miles to or beyond the Texas State Line and 40 miles from East to West at the widest part.



The gas produced in the Hugoton Field is encountered at an average depth of from 2700 to 2800 feet. The producing horizons are lime bodies, separated by impervious shale beds. The thickness of the gas producing formations or pays varies from three to six streaks of porous lime and will range from 17 feet to 135 feet in aggregate thickness. Gas producing zones vary greatly over short distances. It is a field that is generally described as having low permeability and wells drilled within one mile of each other do not materially affect one another by pressure or delivery rates.

In studying the original open flow of the wells drilled, we find that there is a very definite trend from Northeast to Southwest and which generally conforms to the trend or boundaries of the field.

The Kansas and Oklahoma portions of the field are divided into many small tracts, usually 160 acre tracts. This is due to the fact that the lands were acquired by homesteading by the landowners from the Public Domain lands of the Government. Therefore, it has developed that the oil and gas leases acquired by the gas companies are mostly on 160 acre tracts. There are very few leases owned by [fol. 11061] one company that can be termed blocked leases. However, due to the peculiar condition in the Hugoton Field, it is generally accepted that blocking is not as necessary as in the Texas Panhandle Field because, being of low permeability, underground drainage is not so great and the movement of gas is very slow.

There has been a very definite policy of development established by the producers and also the state Corporation Commissions that a unit for drilling shall be one well to 640 acres. This has, therefore, required that the producers communitize separate leases under one lease or unit agreement, whereby one well perpetuates the leases under such agreement.

This is a factor of value because the producer is relieved from drilling as many as three additional wells to hold the separate leases perpetually, and has reduced to a minimum the construction or drilling costs. These leases have, therefore, lost their original identity.

Most leases of the Panhandle Eastern Pipe Line Company in Kansas and Oklahoma, valued in this report, are situated within the proven gas area of the Hugoton Field and the remaining leases are favorably located according to indicated trends.

Due to their locations, most of them fall within certain areas of estimated productivity, based on a study of the wells now drilled and their original open flows. This has made it necessary that they be divided into several classifications as indicated by these areas. Consideration has been given the proximity of wells of certain open flow, the past producing history of the wells, and the location of [fol. 11062] Panhandle Eastern leases to those wells. The consolidations of the leases were given special consideration, based on favorable terms of the consolidations.

The summary or recapitulation attached to my exhibit shows a total acreage in each classification and the market value of leases in the various classifications with respect to the Hugoton acreage, as well as the Panhandle acreage.

In valuing the leases of Panhandle Eastern Pipe Line Company, I have not considered as a value factor the fact that the wells drilled thereon are connected to pipe lines; nor have I attempted to place a value upon the wells or equipment used in connection therewith. The values shown in the tabulations reflect merely the present market value of the leases, according to my judgment. It is my opinion that if this acreage reserve owned by the Panhandle Eastern Pipe Line Company in the two fields was available, it could unquestionably secure an outlet for its gas, exclusive of any pipe line now in the fields and could be sold at the valuation fixed by me.

It is my judgment that the leases would have no value from a standpoint of the oil rights covered thereby and I have placed on said leases no valuation, based on the circumstance that some or all of such leases authorize the lessee to produce oil.

Dated this August 25th, 1941.

R. J. WALLACE.

Panhandle Eastern Pipe Line Company

Summary  
Market Value Of Leases  
By R. J. Wallace

Line No.	(A)	Class A1		Class A2		Class A3		Class B1		Class B2	
		Acres (B)	Value (C)	Acres (D)	Value (E)	Acres (F)	Value (G)	Acres (H)	Value (I)	Acres (J)	Value (K)
1	Moore County, Texas										
2	Drilled Leases	18 773 19	\$ 1 877 319 00	504 80	\$ 37 860 00	480	\$ 24 000 00	160	\$ 4 000 00		
3	Undrilled Leases	3 680	368 000 00	2 234 80	167 610 00	160	8 000 00	480	12 000 00	1 299 60	\$ 19 494 00
4	Carson County, Texas										
5	Drilled Leases			6 200	465 000 00	360	18 000 00				
6	Undrilled Leases			1 202 50	90 187 50					716	10 740 00
7	Potter County, Texas										
8	Drilled Leases			480	36 000 00	3 382 81	169 140 50				
9	Undrilled Leases			126	9 000 00	400	20 000 00	220	5 500 00	220	3 300 00
10	Hutchinson County, Texas										
11	Drilled Leases					120	6 000 00	142 60	2 965 00		
12	Undrilled Leases										
13	Sherman County, Texas										
14	Undrilled Leases										
15	Hansford County, Texas										
16	Undrilled Leases										
17		22 453 19	\$ 2 245 319 00	10 742 10	\$ 805 657 50	4 902 81	\$ 245 140 50	1 002 60	\$ 24 465 00	2 235 60	\$ 33 534 00
18											
19											

Classification  
Texas Leases

A1	\$ 100 00 per acre
A2	75 00 " "
A3	50 00 " "
B1	25 00 " "
B2	15 00 " "
B3	10 00 " "
C	5 00 " "

pany

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Class B1		Class B2		Class B3		Class C		Total	
Acres	Value (I)	Acres (J)	Value (K)	Acres (L)	Value (M)	Acres (N)	Value (O)	Acres (P)	Value (Q)
	\$ 4 000 00							19 917 99	\$ 1 943 179 00
	12 000 00	1 299 60	\$ 19 494 00					7 854 40	575 104 00
		716	10 740 00					6 560	483 000 00
								1 918 50	100 927 50
	5 500 00	220	3 300 00	640	\$ 6 400 00			3 862 81	205 140 50
								1 600	44 200 00
60	2 965 00			.80	800 00			262 60	8 965 00
								80	800 00
						5 411	\$ 27 055 00	5 411	27 055 00
				17 665 30	176 653 00	320	1 600 00	17 985 30	178 253 00
60	\$ 24 465 00	2 235 60	\$ 33 534 00	18 385 30	\$ 183 853 00	5 731	\$ 28 655 00	65 452 60	\$ 3 566 624 00
Hugoton Field Leases								199 519 26	5 128 900 00
Grand Total								264 971 86	\$ 8 695 524 00

## Panhandle Eastern Pipe Line Company

Summary  
Market Value Of Leases  
By R. J. Wallace

Line No.	(A)	Class A1		Class A2		Class A3		Class B1		Class B2	
		Acres (B)	Value (C)	Acres (D)	Value (E)	Acres (F)	Value (G)	Acres (H)	Value (I)	Acres (J)	Value (K)
1.	Texas County, Oklahoma										
2	Undrilled Leases	47 314	\$ 1 855 990 00	25 950	\$ 648 750 00	7 440	\$ 111 600 00				
3	Stevens County, Kansas										
4	Drilled Leases	16 170 95	565 983 25	6 401 41	160 035 25	5 038	75 570 00				
5	Undrilled Leases	19 084 90	352 971 50	11 040	276 000 00	7 200	108 000 00	640	\$ 3 200 00		
6	Grant County, Kansas										
7	Drilled Leases	1 200	42 000 00	3 280	82 000 00	6 880	103 200 00				
8	Undrilled Leases	2 160	75 600 00	6 720	168 000 00	18 440	276 600 00				
9	Morton County, Kansas										
10	Drilled Leases	2 400	84 000 00	800	20 000 00	640	9 600 00				
11	Undrilled Leases	480	16 800 00	640	16 000 00	480	7 200 00				
12	Seward County, Kansas										
13	Undrilled Leases					13 200	198 000 00	1 440	7 200 00		
14	Haskell County, Kansas										
15	Undrilled Leases			1 240	31 000 00	2 240	33 600 00				
16		79 809 85	\$ 2 793 344 75	56 071 41	\$1 401 785 25	61 558	923 370 00	2 080	\$ 10 400 00		

Classification  
Hugoton Leases

A1	\$35 00 per acre
A2	25 00 " "
A3	15 00 " "
B1	5 00 " "



company

Class B1		Class B2		Class B3		Class C		Total	
	Value (I)	Acre (J)	Value (K)	Acre (L)	Value (M)	Acre (N)	Value (O)	Acre (P)	Value (Q)
								80 704	\$ 2 416 340 00
\$ 3 200 00								27 610 36	801 588 50
								28 964 90	740 171 50
								11 360	227 200 00
								27 329	520 200 00
								3 840	113 600 00
								1 600	40 000 00
7 200 00								14 640	205 200 00
								3 480	64 600 00
\$ 10 400 00								199 519 26	\$ 5 128 900 00
						Texas Leases		65 452 60	3 586 624 00
						Grand Total		264 971 86	\$ 8 695 524 00

[fol. 12159]

(Exhibit 38)

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## Panhandle Eastern Pipe Line Company and Subsidiary Companies

## Basic Statistics Used in Calculating Interest, Ad Valorem Taxes and Operating Expense Attributable To Unused Capacity

Line No.		Apr. 1, 1932 Dec. 31, 1932 (A)	Jan. 1, 1933 Dec. 31, 1933 (B)	Jan. 1, 1934 Dec. 31, 1934 (C)	Jan. 1, 1935 Dec. 31, 1935 (D)	Jan. 1, 1936 Sept. 30, 1936 (E)	Oct. 1, 1936 Sept. 30, 1937 (F)
1	Investment						
2	Total	\$ 42 607 277	\$ 42 605 641	\$ 42 596 977	\$ 42 563 917	\$ 44 211 016	\$ 46 926 202
3	Argus, Local Area and						
4	portion used in Transportation	\$ 4 585 826	\$ 5 142 187	\$ 4 994 764	\$ 4 847 106	\$ 4 101 613	\$ 2 904 032
5	Total less Argus, Local and Transportation	\$ 38 021 451	\$ 37 463 454	\$ 37 602 213	\$ 37 716 811	\$ 40 109 403	\$ 44 022 170
6	Gross Revenues						
7	Total	\$ 1 427 494	\$ 2 585 397	\$ 3 048 548	\$ 3 611 865	\$ 3 786 273	\$ 9 318 459
8	Argus, Local Area and						
9	portion used in Transportation	\$ 498 394	\$ 701 321	\$ 665 870	\$ 708 285	\$ 393 371	\$ 365 376
10	Total less Argus, Local and Transportation	\$ 929 100	\$ 1 884 076	\$ 2 382 648	\$ 2 903 580	\$ 3 392 902	\$ 8 953 083
11	MCF Sold or Transported						
12	Total	12 139 010	23 891 891	25 983 690	28 652 895	23 008 968	39 219 025
13	Argus, Local Area and						
14	Transported	8 554 250	15 430 787	15 289 723	25 510 846	7 496 787	2 057 116
15	Total less Argus, Local						
16	and Transportation	3 584 760	8 461 104	10 693 967	13 142 049	15 512 181	37 161 909
17	Maximum Day Sales — MCF	32 424	52 567	48 299	44 168	82 157	121 455
18	Maximum Line Capacity — Daily MCF	80 000	80 000	80 000	80 000	80 000	125 000
19	Interest Charges	\$ 1 335 289	\$ 1 771 852	\$ 1 760 425	\$ 1 451 385	\$ 813 694	
20	Ad Valorem Taxes	\$ 209 668	\$ 256 884	\$ 246 425	\$ 260 374	\$ 211 099	
21	Operating Expense, Partial *	\$ 481 290	\$ 566 685	\$ 557 257	\$ 568 135	\$ 539 631	
22	Total Interest, Ad Valorem Taxes and Operating Expense	\$ 2 026 247	\$ 2 595 421	\$ 2 564 107	\$ 2 279 894	\$ 1 564 424	
23	Total Interest, Ad Valorem Taxes and Operating Expense						
24	allocable to Argus, Local and Transportation	\$ 218 024	\$ 313 267	\$ 300 770	\$ 259 680	\$ 145 179	
25	Total Interest, Ad Valorem Taxes and Operating Expense						
26	after allocation to Argus, Local and Transportation	\$ 1 808 223	\$ 2 282 154	\$ 2 263 337	\$ 2 020 214	\$ 1 419 245	

\* Includes only operating expenses that vary with MCF sold.

[fol. 12160]

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(Exhibit 38)

## Panhandle Eastern Pipe Line Company And Subsidiary Companies

## Five Different Methods Of Calculating Interest, Ad Valorem Taxes and Operating Expense Attributable To Unused Capacity

Line No.		April 1, 1932 Dec. 31, 1932 (A)	Jan. 1, 1933 Dec. 31, 1933 (B)	Jan. 1, 1934 Dec. 31, 1934 (C)	Jan. 1, 1935 Dec. 31, 1935 (D)	Jan. 1, 1936 Sept. 30, 1936 (E)	Oct. 1, 1936 Sept. 30, 1937 (F)	Total (G)
27	Direct Investment — Volume Method							
28	Investment per MCF (Line 5 + Line 16)	\$ 10 61	\$ 4 43	\$ 3 52	\$ 2 87	\$ 2 59	\$ 1 18	
29	Percent used capacity (Line 28, Col. F + Cols. A,B,C,D,E)	14 83	26 64	33 52	41 11	60 74	100 00	
30	Percent unused capacity (1.00 — Line 29)	85 17	73 35	66 48	58 89	39 26		
31	Charges Unused Capacity (Line 26 x Line 30)	\$1 540 064	\$1 673 960	\$1 504 666	\$1 189 704	\$ 557 196		\$6 465 590
32	Direct Investment — Revenue Method:							
33	Investment per \$1.00 Revenue (Line 5 + Line 10)	\$ 40 92	\$ 19 88	\$ 15 78	\$ 12 99	\$ 11 82	\$ 4 92	
34	Percent Used Capacity (Line 33, Col. F + Cols. A,B,C,D,E)	16 03	24 75	31 17	37 88	55 50	100	
35	Percent Unused Capacity (1.00 — Line 34)	83 97	75 25	68 83	62 12	44 50	0	
36	Charges Unused Capacity (Line 26 x Line 35)	\$1 518 365	\$1 717 321	\$1 557 855	\$1 254 957	\$ 631 564		\$6 680 062
37	Direct Investment — Max. Day — Method							
38	Investment per MCF on Max. Day (Line 5 + Line 17)	\$ 1 173	\$ 713	\$ 779	\$ 854	\$ 488	\$ 362	
39	Percent Used Capacity (Line 38, Col. F + Cols. A,B,C,D,E)	30 86	50 77	46 47	42 39	74 18	100	
40	Percent Unused Capacity (1.00 — Line 39)	69 14	49 23	53 53	57 61	25 82	0	
41	Charges Unused Capacity (Line 26 x Line 40)	\$1 250 205	\$1 123 504	\$1 211 564	\$1 163 845	\$ 366 449		\$5 115 567
42	Adjusted Base Year — Volume Method							
43	Basic Loaded Year (Line 16, Col. F x 80/125)						23 783 622	
44	Percent Used Capacity (Line 16, Cols. A,B,C,D,E, + Line 43, Col. F)	20 10	35 58	44 96	55 26	86 96	100	
45	Percent Unused Capacity (1.00 — Line 44)	79 90	64 42	55 04	44 74	13 04	0	
46	Charges Unused Capacity (Line 26 x Line 45)	\$1 444 770	\$1 470 164	\$1 245 741	\$ 903 844	\$ 185 070		\$5 249 589
47	Adjusted Base Year — Revenue Method							
48	Basic Loaded Year (Line 10, Col. F x 80/125)						\$5 729 973	
49	Percent Used Capacity (Line 10, Cols. A,B,C,D,E, + Line 48, Col. F)	21 62	32 88	41 58	50 67	78 95	100	
50	Percent Unused Capacity (1.00 — Line 49)	78 38	67 12	58 42	49 33	21 05	0	
51	Charges Unused Capacity (Line 26 x Line 50)	\$1 417 285	\$1 531 782	\$1 322 241	\$ 996 572	\$ 4298 751		\$5 566 631

4206

[fol. 12162] (Exhibit 39.)

Panhandle Eastern Pipe Line Company and Subsidiary  
Companies Reproduction Cost New of Plant Property and  
Business As Of June 30, 1941.

P. McDonald Biddison, Consulting Engineer Dallas, Texas

[fol. 12163] P. McDonald Biddison  
Consulting Engineer  
Dallas Gas Building  
Dallas, Texas

Kansas City, Missouri, August 29th, 1941.

Panhandle Eastern Pipe Line Company  
90 Broad Street  
New York, N. Y.

Attention: Mr. J. D. Creveling, President.

Gentlemen:

I have made an estimate of the Cost of Reproduction  
New of the consolidated Plant, Property and Business of  
Panhandle Eastern Pipe Line Company and Subsidiary  
Companies of June 30, 1941.

The Cost of Reproduction-New, in the amount of \$85,-  
262,766.09 is detailed in the subsequent pages hereof.

Yours very truly,

P. McDONALD BIDDISON,  
Consulting Engineer.

PMcDB/IF  
(Seal)

Panhandle Eastern Pipe Line Company And Subsidiary Companies  
Plant, Property And Business

Reproduction Cost — New

June 30, 1941

Line No.	Item (A)	Reproduction Cost — New (B)	Total (C)
1	<u>Production System Property</u>		
2	Land	\$ 971 02	\$
3	Leaseholds	8 395 524 00	
4	Gas Wells and Equipment	2 053 884 39	
5	Other Production System Structures	42 188 75	
6	Drilling and Clean-out Equipment	20 676 46	
7	Total — Production System Property		10 813 244 62
8	<u>Transmission System Property</u>		
9	Land	\$ 55 909 84	
10	Right of Way	1 278 521 36	
11	Measuring and Regulating Structures	104 475 27	
12	Other Transmission System Structures	382 920 59	
13	Measuring and Regulating Equipment	491 685 32	
14	Transmission Mains	43 025 965 41	
15	Compressor Stations	9 792 271 60	
16	Other Transmission System Equipment	128 657 49	
17	Total — Transmission System Property		55 260 406 88
18	<u>Gasoline Production System Property</u>		
19	Liberal Gasoline Plant	\$ 621 510 23	
20	Total — Gasoline System Property		621 510 23
21	<u>General System Property</u>		
22	General Office Equipment	\$ 78 082 36	
23	General Transportation Equipment	109 971 90	
24	General Laboratory Equipment	6 550 71	
25	General Communication Equipment	492 708 29	
26	General Tools and Implements	40 251 86	
27	Total — General System Property		727 565 12
28	Total — Direct Construction Costs		\$ 67 422 726 85
29	Intangible Fixed Capital		505 670 45
30	Undistributed Construction Expenditures		7 781 764 69
31	Construction Work in Progress		149 669 62
32	Total — Fixed Property		\$ 75 859 831 61
33	Working Capital		9 000 00
34	Value of Gas Purchase Contracts		1 994 00
35	Cost of Business Development		6 053 992 48
36	Reproduction Cost New, Plant, Property And Business		\$ 85 262 766 09

Panhandle Eastern Pipe Line Company And Subsidiary Companies  
Production System Property

Summary

Line No.	Item (A)	Reproduction Cost — New (B)	Total (C)
1	Production System Land	\$ 971 02	\$
2	Production System Leaseholds	8 395 524 00	
3	Production System Gas Wells and Equipment	2 053 884 39	
4	Other Production System Structures	42 188 75	
5	Drilling and Clean-out Equipment	20 676 46	
6	Total — Production System Property		\$ 10 813 244 62

4207



4208

[fol. 13130]

(Exhibit 39-A.) Corrected Sheets.

P. McDonald Biddison  
Consulting Engineer  
Dallas Gas Building  
Dallas, Texas

Kansas City, Missouri, August 29th, 1941.

Panhandle Eastern Pipe Line Company  
90 Broad Street  
New York, N. Y.

Attention: Mr. J. D. Creveling, President

Gentlemen:

I have made an estimate of the Cost of Reproduction New of the consolidated Plant, Property and Business of Panhandle Eastern Pipe Line Company and Subsidiary Companies of June 30, 1941.

The Cost of Reproduction-New, in the amount of \$83,833,448.54 is detailed in the subsequent pages hereof.

Yours very truly,

P. McDONALD BIDDISON,  
Consulting Engineer.

PMcDB/IF  
(Seal)

June 30 1941

Line No.	Item (A)	Reproduction Cost — New		Total (C)
		Cost	(B)	
1	<u>Production System Property</u>			
2	Land	\$	971 02	\$
3	Leaseholds	8 695 524 00		
4	Gas Wells and Equipment	2 053 884 39		
5	Other Production System Structures	42 188 75		
6	Drilling and Clean-out Equipment	20 676 46		
7	Total — Production System Property			10 813 244 62
8	<u>Transmission System Property</u>			
9	Land	\$	55 909 84	
10	Right of Way	1 278 521 36		
11	Measuring and Regulating Structures	104 475 27		
12	Other Transmission System Structures	382 920 59		
13	Measuring and Regulating Equipment	491 685 32		
14	Transmission Mains	41 960 870 15		
15	Compressor Stations	9 764 143 60		
16	Other Transmission System Equipment	128 657 49		
17	Total — Transmission System Property			54 167 183 62
18	<u>Gasoline Production System Property</u>			
19	Liberal Gasoline Plant	\$	621 510 23	
20	Total — Gasoline System Property			621 510 23
21	<u>General System Property</u>			
22	General Office Equipment	\$	78 082 36	
23	General Transportation Equipment	109 971 90		
24	General Laboratory Equipment	6 550 71		
25	General Communication Equipment	492 798 29		
26	General Tools and Implements	40 251 86		
27	Total — General System Property			727 565 12
28	Total — Direct Construction Costs			\$ 66 329 503 59
29	Intangible Fixed Capital			497 471 27
30	Undistributed Construction Expenditures			7 647 897 58
31	Construction Work in Progress			149 669 62
32	Total — Fixed Property			\$ 74 624 542 06
33	Working Capital			1 569 000 00
34	Value of Gas Purchase Contracts			1 585 914 00
35	Cost of Business Development			6 953 992 48
36	Reproduction Cost-New, Plant, Property And Business			\$ 83 833 448 54

ol. 131334

Corrected

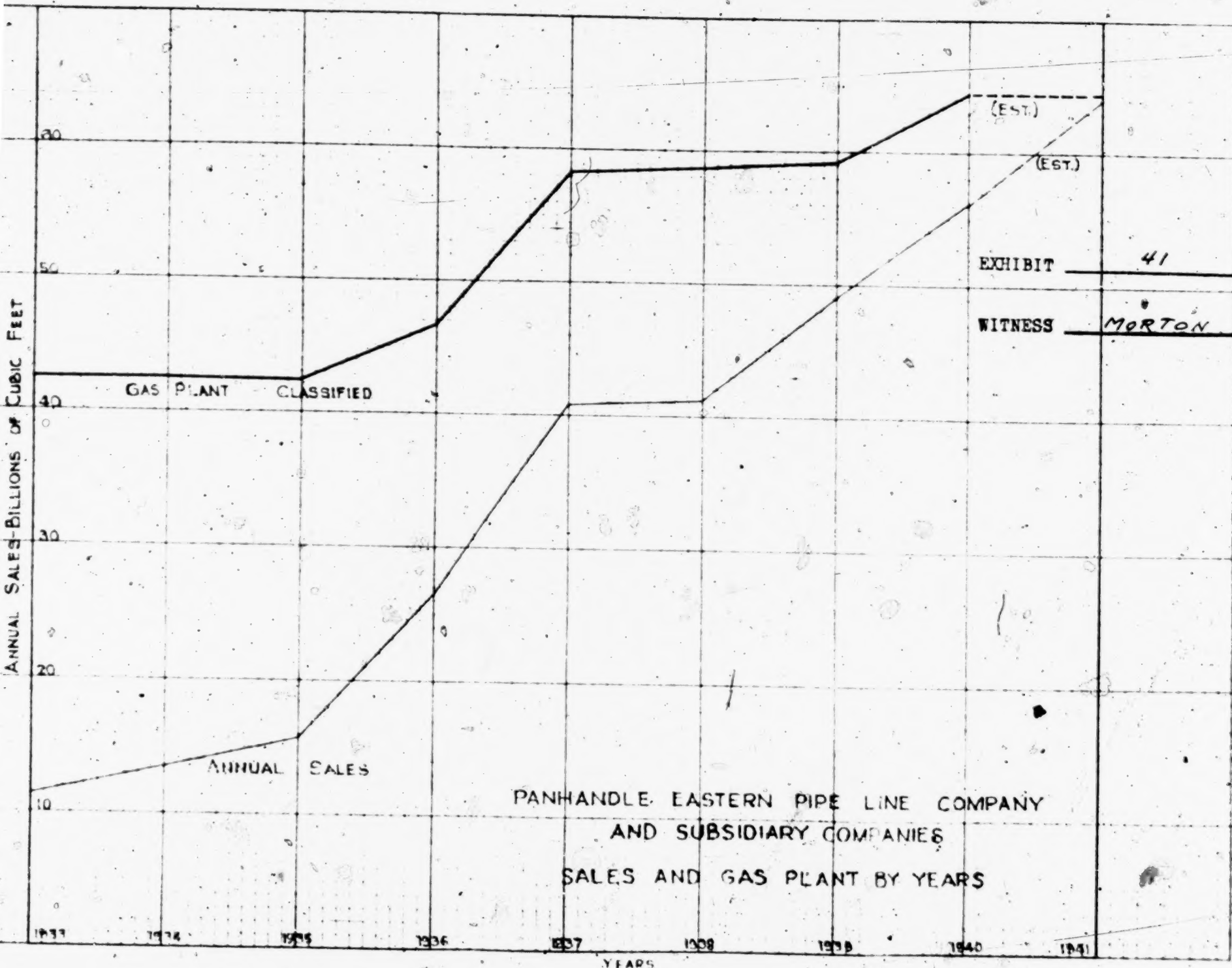
Panhandle Eastern Pipe Line Company And Subsidiary Companies

Transmission System Property

Summary

Line No.	Item (A)	Reproduction Cost — New	
		Cost	(B)
1	Transmission System Land	\$	55 909 84
2	Transmission System Right of Way	1 278 521 36	
3	Transmission System Measuring and Regulating Structures	104 475 27	
4	Other Transmission System Structures	382 920 59	
5	Transmission System Measuring and Regulating Equipment	491 685 32	
6	Transmission Mains	41 960 870 15	
7	Compressor Stations	9 764 143 60	
8	Other Transmission System Equipment	128 657 49	

EXHIBIT 41.



[L. 13153]  
 April 1930 to  
 May 1930

Was employed by Ford, Bacon and Davis in the construction of an oil pipe line from Glen Pool, Oklahoma, to Wood River, Illinois.

May 1930 to  
 June 1931

Was employed as Chief Field Engineer for Ajax Pipe Line Company, principally in further construction of the line which had been started by Ford, Bacon and Davis.

June 1931 to  
 July 1931

Employed by Panhandle Eastern Pipe Line Company, except for a period of about twenty months in 1936 and 1937. During that time, I was working for myself on projects relating to sound control and general construction. During the period of my service with Panhandle Eastern Pipe Line Company, I have kept in touch with various features of the Company's business, including its construction activities and its production activities. Commencing in October 1937 and continuing to date, my official title has been Production Engineer. As such, the drilling of wells, the reconditioning of wells, the testing of wells, and other problems related to production have been under my general jurisdiction. It has also been one of my duties to

[L. 13154]

advise the management relative to additions to gathering facilities, including additional gathering lines

and increased power in the compressor stations, in order that such gas as is needed might be promptly gathered and delivered into the main line. When advising of the amounts of gas which will probably be required to satisfy the markets of Panhandle Eastern, it has been one of my duties to recommend the drilling of such additional wells and the providing of such additional facilities and power in the gathering system as will result in the delivery of gas to satisfy peak day requirements.

[fol. 13155] Written Testimony Of C. H. Hinton.

Subject Matter Of Testimony:

Under direction of the management, I have made a careful study of the future capital expenditures which will probably be incurred by Panhandle Eastern Pipe Line Company in its production and gathering activities West and South of Liberal, Kansas. This study has also included a consideration of the increased operating expenses which necessarily will result from the circumstance that as the properties become older, the pressures lowered, and the reserves further depleted, the unit costs for producing and gathering the gas will be substantially higher than those heretofore existing.

This study has also included a determination of the amount of gas which the Company will probably be able to take from its reserves (both owned and held by gas purchase contracts) in the Panhandle Field within the present indicated economic life of those reserves and in making the study, I have considered (a) present market requirements, and (b) anticipated increases in such requirements.

In my references hereafter made to the Hugoton Field, I include all those portions of Kansas, Oklahoma and Texas which lie within the Hugoton Field, as outlined in Exhibit 26 and other maps presented in connection with the testimony of Messrs. Burnham, Bartie, and Smith.

[fol. 13151]

## Exhibit 42.

Written Testimony of  
Witness C. H. Hinton[fol. 13152] Statement of Qualifications and Experience  
of C. H. Hinton

## 1. Name, address, and age.

C. H. Hinton, Kansas City, Missouri; age, 36.

## 2. Present position:

Production Engineer, Panhandle Eastern Pipe Line Company.

## 3. Education:

Attended University of Illinois from September 1924 to February 1928, taking courses in the School of Mechanical Engineering.

## 4. Business experience:

June 1924 to  
February 1928

During vacations and for part of the time while attending school, I worked in the office of supervising architect of the University of Illinois.

February 1928 to  
February 1929

Worked in the Acoustical Engineering Department of the Celotex Company, out of Chicago and Champaign, Illinois.

February 1929 to  
to April 1929

Was employed by Engineering Service Corporation, Houston, Texas.

April 1929 to  
April 1930

Was employed by Mississippi River Fuel Corporation as Division Engineer, working out of Pine Bluff, Arkansas, during a portion of the time and out of St. Louis, Missouri, the remainder of the time.



### Principles Recognized:

In my investigation, I have recognized the following principles and assumptions:

1. Panhandle Eastern will, so long as economically advisable, continue to apportion its takes between the Panhandle Field and the Hugoton Field on approximately the present basis.

Panhandle Eastern now produces and transports for main line purposes gas from two fields—the Hugoton [fol. 13156] Field and the Panhandle Field. In apportioning its withdrawals between those fields, it takes into consideration the differences in conditions which exist in the two fields, with the hope that (a) it will by production eliminate the probability of drainage from its producing properties in the Hugoton Field, and (b) it will have been able, by the time it is forced to discontinue operations in the Panhandle Field, to produce an amount of gas substantially equivalent to its reserves in that field.

It is shown from Exhibit 30, Schedule 11, presented in connection with the testimony of Rufus M. Smith, that of the main line production to June 22, 1941, 68.75% was taken from the Panhandle Field. For the month of June 1941, the percentage was 65.85% and for the first six months of 1941 it was 72.74%. It is now estimated that the total requirements for 1941 will be 61 billion cubic feet on a 16.4# pressure base and that 45 billion cubic feet, or 73.77%, will be taken from the Panhandle Field. I, therefore, assume that until pressures and volumes decline to the point where it is not economical to do so, the Company will continue to take from its reserves in the Panhandle Field as great a percentage as can be taken without doing inequity to its producers and royalty owners in the Hugoton Field.

2. It will continue to apportion its production between its own leaseholds and its gas purchase contract acreage on the basis now existing.

While the present apportionment may be changed, it is clear that no fair method of apportioning withdrawals from the Panhandle reserves would result in a smaller

percentage being taken from the Company's leaseholds than is taken under the present allocation of 50% to acreage and 50% to open flow potentials, with 640 acres as the [fol. 13157] minimum drilling unit. I have, therefore, assumed a continuance of that policy by this Company in the Panhandle Field.

3. Additional wells in Panhandle Eastern's reserves in the Panhandle Field will be drilled on only its own leaseholds.

Except for one location, no more wells are required for full development of the lands covered by the gas purchase contracts. There are, however, fifteen locations on the leaseholds in the Panhandle Field belonging to Panhandle Eastern Pipe Line Company, and I assume that these locations will be drilled. Therefore, as additional gas supplies are required from the Panhandle reserves to furnish additional market requirements or to maintain present loads under reduced pressures and potentials, such additional gas must be obtained from wells to be hereafter drilled by the Company on its own leaseholds in that field. The time for drilling these wells will be determined by the demands for additional gas and the obligations of existing lease contracts.

4. As volumes increase and as pressures decline, additional gathering facilities must be provided for.

This will, of course, not be denied. In some instances, the additional capacity will be furnished by field power or booster stations; in others by looping sections of the gathering lines; and in others by the addition of equipment to the regular compressor stations. In my estimates, I have anticipated the use of each of those methods.

5. As the Panhandle Field declines, the Company must look more and more to its reserves in the Hugoton Field.

Looking forward to the time when it will not be economical [fol. 13158] call to supply a very large percentage of its market requirements from its reserves in the Panhandle Field, the Company must be pursuing a policy of developing its reserves in the Hugoton Field so that adequate production will be at all times available to supply the

ESTIMATED MAIN LINE SALES  
YEARS 1941 - 1946, INCLUSIVE

## PANHANDLE EASTERN PIPE LINE COMPANY SYSTEM

(A)	(B)	1941 (C)	1942 (D)	1943 (E)	1944 (F)	1945 (G)	1946 (H)
<b>EAST OF DANA</b>							
<u>Michigan</u>							
Detroit - - - - -	MCF	24 000 000	27 000 000	29 150 000	30 950 000	32 750 000	34 700 000
	Max-Day	102 604	142 000	184 520	176 000	189 000	201 000
Other							
Industrial - - - - -	MCF		1 040 000	1 423 000	1 588 000	1 718 000	3 323 000
	Max-Day		2 890	3 940	4 850	5 270	10 040
Dom. Comm. & Other - - - - -	MCF	407 500	4 051 870	4 697 200	5 060 000	5 451 000	10 296 200
	Max-Day	1 384	9 110	14 660	17 350	18 730	42 760
<u>Indiana and Ohio</u>							
Industrial - - - - -	MCF	10 250 000	11 300 000	12 100 000	12 700 000	13 200 000	13 700 000
	Max-Day	27 708	34 400	36 800	38 700	40 250	41 700
Other (Loc. Co. use) - - - - -	MCF	5 200 000	5 600 000	6 000 000	6 400 000	6 800 000	7 200 000
	Max-Day	28 676	28 000	30 000	32 000	34 000	36 000
<u>Kentucky Natural Gas Co.</u> - - - - -	MCF	2 200 000	1 720 000	1 690 800	2 002 500	2 500 000	2 920 000
	Max-Day	7 608	5 200	5 200	6 100	7 600	8 900
<b>TOTAL EAST OF DANA</b> - - - - -	MCF	42 057 500	50 711 870	55 061 000	58 700 500	62 419 000	72 139 200
	Max-Day	167 980	221 600	255 100	275 000	294 850	340 400
<b>WEST OF DANA</b>							
<u>Industrial</u> - - - - -	MCF	13 000 000	14 000 000	14 300 000	14 850 000	15 300 000	15 600 000
	Max-Day	38 400	42 600	43 600	45 200	46 600	47 500
<u>Domestic and Commercial</u> - - - - -	MCF	7 000 000	7 500 000	8 100 000	8 700 000	9 300 000	9 850 000
	Max-Day	34 014	41 000	44 300	47 600	51 000	54 000
<b>TOTAL WEST OF DANA</b> - - - - -	MCF	20 000 000	21 500 000	22 400 000	23 550 000	24 600 000	25 450 000
	Max-Day	72 414	83 600	87 900	92 800	97 600	101 500
<b>TOTAL MAIN LINE</b> - - - - -	MCF	62 057 500	72 211 870	77 461 000	82 250 500	87 019 000	97 589 200
	Max-Day	240 394	305 200	343 000	367 800	392 450	441 900

35 Cost of Business Development 6 053 992 48

36 Reproduction Cost New, Plant, Property And Business \$ 83 833 448 54

[fol. 13133]

Corrected  
Panhandle Eastern Pipe Line Company And Subsidiary Companies  
Transmission System Property

Summary

Line No.	Item (A)	Reproduction Cost — New (B)	
1	Transmission System Land	\$	55 909 84
2	Transmission System Right of Way		1 278 521 36
3	Transmission System Measuring and Regulating Structures		104 475 27
4	Other Transmission System Structures		382 920 59
5	Transmission System Measuring and Regulating Equipment		491 685 32
6	Transmission Mains		41 960 870 15
7	Compressor Stations		9 764 143 60
8	Other Transmission System Equipment		128 657 49
9	Total — Transmission System Property	\$	54 167 183 62

market. The Panhandle Field will not be a "one-horse shay". It will not suddenly cease producing but, in my opinion, its decline in productivity will be at an ever increasing rate. The Company must maintain its reserves in the Hugoton Field and do such drilling as is necessary to keep its leases in force and construct such gathering lines as are necessary to serve the areas from which it expects to produce gas, providing such additional power and other facilities as may be required from time to time to handle the gas taken. These facilities must be prepared in advance of actual necessity therefor. Gathering lines of substantial sizes must be laid so that with additions by looping and the use of more power, the ultimate needs of the areas served will be provided for.

6. The Panhandle Field is a highly competitive one and one of varied producing characteristics.

This fact must be recognized in any attempt to estimate future conditions. A production engineer, charged with the duty of obtaining from his Company's reserves production of given volumes at given times, is faced with many major problems. Particularly is this true in the Panhandle Field. If the problem were merely a matter of dividing the amount of gas required each year into the estimated gas content of the reserves, the arithmetic involved would be simple.

This, if the reserves of Panhandle Eastern in the Panhandle Field were, as assumed by Mr. Toeppen, 750 billion [vol. 12159] cubic feet as of November 1, 1940, (this being the amount estimated by Mr. Davis in Toeppen's Exhibit 4) and if Panhandle Eastern's requirements from the Panhandle Field are 60 billion cubic feet annually, the supply would be exhausted in  $12\frac{1}{2}$  years from November 1, 1940, or on May 1, 1953. Or, on the basis of present requirements of 45 billion cubic feet annually, they would be exhausted in  $16\frac{2}{3}$  years from November 1, 1940, or on July 1, 1957.

Or, if its reserves were, on July 1, 1941, the 733 billion cubic feet at zero pounds, as estimated by Mr. Smith, and they could be produced to a 50 pound abandonment pressure with a 90% recovery factor, they would last 10 $\frac{1}{2}$  years, or to November 1, 1951, on an average take of 60 bil-



lion annually; or they would last  $13\frac{1}{2}$  years, or to November 1, 1954, on an average take of 45 billion annually. Even if the estimated content could be produced to zero pounds at 100% recovery factor, the reserves would be produced in  $12\frac{1}{4}$  years with an annual outlet of 60 billion cubic feet, or  $16\frac{1}{2}$  years with the present annual outlet of 45 billion cubic feet.

But the problem facing the production engineer is not that simple a problem in arithmetic. The reserve of gas belonging to a company is not "boxed in" separate and distinct from the reserves belonging to other competitive interests producing gas from the same reservoir. He cannot withdraw his company's required gas from the stock on hand as the housewife would withdraw for a meal potatoes from her storehouse in the cellar. Withdrawals of gas must be provided for with recognition of the fact that other competitive producers are at the same time taking gas from the same reservoir. Those producing gas know that the production by others will lessen the ability of one producer to take his own gas, unless he produces concurrently with other producers, and that the taking by all producers results in lowered pressures and increased unit production costs.

The operating problems of the production engineer are further complicated by the circumstance that the gas with which he is dealing is not a perfect gas. For this reason, Boyle's law does not exactly apply to field performance. Certain corrective factors must be taken into consideration in any attempt to apply that law. We also know that great differences exist in the field as to gas content and as to producing characteristics of the wells. We know the sand thickness, porosity, permeability and potentials vary widely. There are rich areas and poor areas (sometimes close together). Some production is from granite wash formations, some from dolomite formations, and some from apparently cavernous conditions. Some wells and nearby formations have been damaged by "salting" conditions, while other areas are, so far, not affected thereby. The effect on pressure conditions in the gas areas resulting from the production of oil from the same formations at lower elevations has not been determined. It is doubtful whether the true equilibrium pressure has

ever been ascertained at any date subsequent to the time production was first commenced.

These and many other elements make necessary an allowance for corrective factors in the Panhandle Field. So far as I know, no one has determined with accuracy just what allowances should be made.

That some such corrective factors must be used (in any [fol. 13161] attempt to apply Boyle's law to the Panhandle Field) becomes at once apparent when an attempt is made to determine the gas content in the field at virgin pressure, by a consideration of the production per pound loss in pressure. We find that when the production per pound drop is multiplied by the virgin pressure, we get indicated contents which will differ for each time period considered, and that if accurate figures are available with respect to drops in pressure and production during the periods of such drops, the production per pound drop becomes less and less as the years go by.

In the following table, production figures used have been taken from what I consider to be the most reliable sources and the pressure drops shown are those reflected in the reports of the Texas Railroad Commission.

Period	Production : MCF	Pressure Loss (Pounds)	Production Per Pound Loss (MCF)	Indicated Virgin Content (Trillion)
Beginning to				
8/1/35	5,197,693,413	67 49	77,014,270	33 166
8/1/35 to				
7/1/36	556,485,654	7 51	74,099,288	31 862
7/1/36 to				
7/1/37	552,281,402	7 95	69,544,830	29 904
7/1/37 to				
8/1/38	622,925,161	9 39	66,339,208	28 525
8/1/38 to				
8/1/40	1,152,418,747	19 35	59,556,524	24 609

Thus, it is clear that on the basis of the figures used, the [fol. 13162] indicated virgin content, calculated through the use of production per pound drop in pressure, becomes less and less as the years go by—that the production per pound loss in pressure becomes progressively less as pressures are lowered and that the indicated virgin content, as

calculated on the curve of declining production per pound loss in pressure, will be far less than the content calculated on the basis of average pressure drops in the past.

#### Disproportionate Production:

Another problem which faces the production engineer in the Panhandle Field is the disproportionate taking of gas—not only as between producers but also as between areas. Large pipe lines carry enormous volumes of gas from the Panhandle Field to Denver, Minneapolis, St. Paul, Omaha, Chicago, Kansas City, Detroit, and many other cities and communities located hundreds of miles from the field. In addition, smaller lines carry gas to various market points in Texas, Oklahoma and Kansas. For use of these pipe lines, 316 billion cubic feet of gas was produced during the year ended July 1, 1940, from an area containing 1,085,270 acres.

During that same period, sour gas for carbon black manufacture was produced from an area of 372,437 acres in the amount of 248 billion cubic feet. This area is located in the same reservoir as that from which the pipe line gas was taken. From that portion of the same reservoir from which oil also is produced, 92 billion cubic feet of so-called casinghead gas was produced, most of which came from the free gas formations above the oil.

[Vol. 13163] In all, during the 12 month period, there was a total production of approximately 656 billion cubic feet of metered sweet gas, sour gas, and casinghead gas from approximately 1,450,000 acres. This does not include gas used for lease purposes, including the gas lost in drilling in wells and in testing or reconditioning operations.

The size of the field and the disproportionate taking by individual producers and by areas from which production is taken makes it extremely difficult to evaluate with certainty the effect which production from the reservoir as a whole will have on the pressures hereafter existing with respect to a particular tract or the loss from drainage which one tract may suffer as a result of disproportion-

ate production from other tracts. Panhandle Eastern's reserves are well located for protection against excessive drainage, but it will be noted from an examination of the 1940 rock pressure map (Exhibit 26) that low pressure areas are now encroaching on Panhandle Eastern's reserves from the North and from the East.

While many factors make it difficult to determine with the desired degree of accuracy, the pressures and operating conditions which will occur in future years, yet, through a study of well performances and area performances in the past few years, a good idea may be obtained of what may be expected during future years.

#### Necessity For Future Planning:

Manifestly, a natural gas company transporting large volumes of gas to distant markets and serving many communities must continuously plan for the future and exercise its best judgment in determining whether additional capital expenditures will be required, so that it will, at all [fol. 13164] times, have available adequate supplies of gas and be able to deliver that gas when and as needed. Thus, as estimates of future requirements are made, the Engineering Department must see that transportation facilities adequate to deliver those requirements are available. If existing facilities are inadequate, additions must be arranged for. Likewise, the Production Department must see to it that the Company at all times has available a supply of gas sufficient to meet market requirements as they arise.

All such facilities, production or transportation must be provided in advance of need. Additional wells and gathering lines must be completed by the time additional transportation facilities are finished and those facilities must be finished before the customer's actual need for service arises.

#### Comparison With Ordinary Utilities:

While other companies of the nature of utilities must, of necessity, look to the future, none is required to do that to such an extent as the natural gas company. An electric utility or a manufactured gas company can rather

quickly construct additional units to manufacture its products. Not so with the natural gas company. Its supply of gas is stored in a reservoir located hundreds of miles from its markets and the reservoir is located several thousand feet below the surface. Many other producers are taking gas from that same reservoir and pressures are constantly declining. Therefore, some representative of a gas pipe line company are constantly studying [fol. 13165] its market and market requirements to determine how much gas will be required if the markets are to be adequately served; other representatives keep closely in touch with the transportation facilities, to see that they are adequate promptly to deliver the volumes of gas required; and other representatives keep advised of the market requirements so that the production and gathering facilities will be adequate to deliver the required amount of gas to the main line when needed.

#### Opportunities Of Witness To Learn Production Conditions:

During the period of my employment by Panhandle Eastern Pipe Line Company, I have had opportunity, and it has been my duty, to observe field performance and well performance, insofar as the properties of Panhandle Eastern in the Panhandle Field are concerned. In conjunction with other representatives of the Production Department, I have made recommendations as to the drilling of wells and their locations and the construction of gathering lines required to gather the gas and deliver it to the main line at Liberal, Kansas. During this period, I have kept in close touch with well performances and familiarized myself with the declines in pressures, potentials, and gas deliverability. It has been necessary for me to do this in order that supplies of gas could be made available for Company requirements as needed and additional wells could be drilled as required, in order to keep the proportion of gas taken from the Hugoton and Panhandle Fields in the desired relation.

In studying well performances, I have noted the effect of acidizing different types of producing formations, the effect of water and cave-ins on the producing capacities of the wells as pressures declined, the effect of salting up of wells and producing formations, as well as many



[fol. 13166] other operating conditions in the field. I have noted the different pressure declines in the different limited areas from which Panhandle Eastern takes gas.

As a result of my experience and studies, I feel qualified to estimate within fairly reasonable limits the length of time Panhandle Eastern will be able economically to continue to produce gas from the Panhandle Field, assuming a continuance of existing conditions except as they may be changed by Panhandle Eastern's own operations. I have made such a study and related the results to the necessary expenditures for both capital and operation over the next  $5\frac{1}{2}$  years.

#### Estimated Requirements:

Prior to making this study, I obtained from Mr. O. W. Morton, Budget and Rate Engineer of Panhandle Eastern Pipe Line Company, his estimates of the gas required for main line purposes from January 1, 1941, to January 1, 1947. This estimate was the same as that contained in Exhibit 40, presented in connection with his testimony, and when adjusted to gas at a 16.4# base with an addition for the gas required for power and loss due to line leakage, the estimated requirements are as follows:

1941	60,000,000 MCF
1942	68,101,459 "
1943	73,051,804 "
1944	77,568,683 "
1945	82,065,748 "
1946	92,034,276 "

The estimate also included the maximum days required [fol. 13167] for each of those years, since it was necessary for that element to be taken into account in my calculations.

#### Apportionment To Panhandle Field:

After obtaining these estimates, I allocated the estimated requirements between the Panhandle Field and the Hugoton Field, on the basis of the present approximate allocation between those fields and then allocated the Panhandle Field portion between Panhandle Eastern's own wells and the wells covered by gas purchase contracts. In this allocation, I used my best judgment concerning the

probable pressures and potentials over the period considered and took into consideration the well drilling program which I expect to be carried on during that period. On this basis, the total takes from the Panhandle Field during the period will, in my judgment, be approximately as follows:

	From Panhandle Eastern's Wells MCF	From Gas Purchase Wells MCF
1941 (6 mos. only)	11,811,800	10,182,000
1942	27,635,000	22,365,000
1943	30,909,600	23,090,400
1944	32,455,500	22,544,500
1945	36,036,000	23,964,000
1946	36,024,000	23,976,000

#### Well Drilling Program:

Of course, it would be possible, when first commencing to produce gas from a reserve for a company to at once [fol. 13168] drill the entire area. Such a practice, however, would necessitate the spending of large sums for drilling purposes and for gathering facilities in advance of need therefor; and it is standard practice in the industry to assemble reserves and then carry on drilling operations if production and market conditions justify. In this way, it is possible to plan future operations intelligently and still save carrying charges on substantial capital investments.

That has been Panhandle Eastern's policy. It has been drilling its wells as economies of the project and lease obligations required.

#### Wells Drilled 1937-1941:

During the period from January 1, 1937, to June 30, 1941, Panhandle Eastern has drilled 63 wells as follows:

Year	Panhandle Field	Hugoton Field
1937	8	19
1938	4	10
1939	7	5
1940	4	4
1941	2	—
Total	25	38

that represented by the estimate of future requirements, given me by Mr. Morton.

It will be noted from the tabulations hereinafter presented that, except for some gathering line expense, practically the same additional investments will be required for the same amount of gas. The principal differences are that the particular expenditures will be required at an earlier date to care for anticipated requirements than the dates such expenditures would be required if the load were to remain static on the basis of the present market requirements. These estimated expenditures in some detail, year by year, are as follows:

[fol. 13172]

a. Basic Load

Last Six Months of 1941

a. Construct and install specially designed liquid separator between Sneed and Hansford Stations in Texas (now being installed), costing	\$ 26,300
b. Construct 2 individual well compressors at Burnett Well No. 108 and Bivins Well No. 91 in Panhandle Field (now being constructed), costing	2,100
c. Construct warehouse at Zofness Camp (completed in August 1941), costing	500
d. Drill well near Guymon, Oklahoma, in Hugoton Field, costing	18,851
e. Purchase new automobile for use of field forces in Hugoton Field, costing	919
f. Construct Cimarron River jetties to protect present river crossing from high water, costing	6,500
Total	55,170

1942

a. Drill 5 wells in Panhandle Field, including acidization and liners, at cost of	106,463
b. Install liners in 2 old wells in Panhandle Field, at a cost of	910
c. Install tubing in two old wells in Panhandle Field, costing	4,202
d. Acidize 4 old wells in Panhandle Field, costing	6,200
e. Lay well lines for 5 new wells in Panhandle Field, costing	15,395
f. Construct 5 measuring stations for new wells in Panhandle Field, costing	3,450
g. Increase capacity of gathering line from Zofness to Sneed by looping existing line between those points and constructing additional gathering line to serve new wells, costing	422,464
h. Construct 12 additional dwellings for employees, including 3 at Zofness, 3 at Hansford and 6 at Sneed, one of the Hansford dwellings being a 10-room hotel for single employees, at a cost of	81,000

[fol. 13173] i. Build 3 garages, a 3-car garage at Hansford, a 3-car garage at Sneed, and a 6-car garage at Zofness, costing \$ 2,760

j.	Drill 13 wells in Texas County, Hugoton Field, including liners and acidization, at a cost of	245,063
k.	Install liners in 2 old wells in Hugoton Field, at a cost of	762
l.	Acidize 10 old wells in Hugoton Field (of which 6 will be 50% owned), at a cost of	15,500
m.	Construct well lines for 14 new wells (including one drilled in 1941), all in Hugoton Field, at a cost of	36,040
n.	Construct and install 10 well dehydrators, at cost of	2,500
o.	Construct 14 measuring stations, at cost of	9,666
p.	Construct trunk gathering line from Liberal toward Hansford, tapping existing line approximately 32 miles at cost of	850,048
q.	Construct Cimarron River Crossing for loop line, costing	220,384
r.	Construct gathering line from Section 31, Township 4, to near Optima in Texas County, Oklahoma, costing	324,180
s.	Construct gathering line in Oklahoma, connecting with the Optima line, at cost of	369,267
t.	Construct telephone line to serve at Optima gathering line, costing	10,830
u.	Construct 3 houses for employees at Optima Camp, costing	18,000
v.	Construct office building at Hugoton Camp, costing	7,000
w.	Construct warehouse at Optima Camp, costing	1,000
x.	Construct one 6-car garage at Optima Camp, costing	1,380
y.	Install 2-way radio station to serve area within 50 mile radius of Hugoton, costing	3,030
z.	Purchase 3 automobiles (coupes) for serving portions of Hugoton Field, costing	2,755
[col. 13174]	z-1. Purchase 1-ton truck for Oklahoma area, costing \$	1,073

Total	2,761,382
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Less contribution of joint owner on capital expenditures	4,650
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Net expenditures	2,756,732
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## 1943

a.	Drill 5 wells in Panhandle Field, including acidization and liners, costing	110,631
b.	Install liners in 3 old wells in Panhandle Field, costing	1,746
c.	Install tubing in 2 old wells in Panhandle Field, costing	4,528
d.	Acidize 5 old wells in Panhandle Field, costing	7,750
e.	Construct well lines for 5 new wells in Panhandle Field, costing	23,335
f.	Construct 5 measuring stations in Panhandle Field, costing	3,450
g.	Construct additional gathering lines in Panhandle Field to serve new wells, costing	7,815
h.	Drill 7 wells in Hugoton Field (5 in Oklahoma and 2 in Kansas), including acidization and liners, costing	132,037
i.	Install liners in 2 old wells in Hugoton Field, costing	796
j.	Acidize 8 old wells in Hugoton Field (4 being 50% owned), costing	12,400
k.	Construct well lines to connect new wells in Hugoton Field, costing	11,311
l.	Construct and install 10 well dehydrators, costing	2,500
m.	Construct 5 measuring stations in Hugoton Field, costing	3,450

During this period of time, the Company has also connected to its gathering system a large number of wells, in both the Panhandle Field and the Hugoton Field (72 wells in all), belonging to those with whom it holds gas purchase contracts. This was an aggregate of 135 wells for  $4\frac{1}{2}$  years, or an average of 30 for each 12 months period.

[fol. 13169] As pressures decline and lease obligations require further drilling, such additional wells will be drilled by Panhandle Eastern as are required to satisfy its market requirements and to protect the Company's gas reserves.

#### Gathering Facilities:

It has also been the policy of the Company to construct gathering lines and install power and other facilities in connection therewith as such additional lines and power are needed. Of course, when laying lines into particular areas, it is economical to provide some excess capacity over and above that immediately required, in order to decrease eventual overall costs, but the lines are constructed to serve the future production from the general area in such a way that by the addition of more power or the looping of lines, a larger number of wells may eventually be served. The Company, in order to gather the increased volumes of gas needed to supply its increasing markets and in order to care for the same volumes of gas at reduced pressures and potentials, will from time to time be required to further add to its gathering facilities in both fields through increases in length of gathering lines and increases in power.

As pressures and potentials of the wells decline, it is obvious that the same volumes of gas must be obtained from a greater number of wells. It is also obvious that to transport this lower pressure gas there must be either (a) more or larger gathering lines, (b) more field compressors, or (c) more power in the field compressor stations. It is my judgment that all three of these methods will be used [fol. 13170] by Panhandle Eastern Pipe Line Company in connection with the future operation of its gathering lines.

Of course, as additional wells are drilled, it will also be necessary to connect those wells to the gathering system. In the case of wells drilled in areas not now served by



gathering lines of Panhandle Eastern, it will be necessary to construct new gathering lines connecting with the trunk gathering line. These new lines will, of course, be constructed in the light of probable later requirements of other wells to be drilled in later years of the project.

### Future Capital Expenditures.

Much of my time for several years has been spent in a study of the conditions existing in the two fields from which Panhandle Eastern takes gas, in an effort to assist the management in plans for necessary future expenditures in those fields. Practically all of my time for several weeks past has been spent in a study of the expenditures, both capital expenditures and operating expenses, which will be required within the next few years. Special attention has been given to the next 5½ years.

In this study, I have estimated the amount of drilling which will be required and the cost thereof, the cost of increased gathering facilities and such other capital expenditures as are related to the production and gathering of gas. This study has been made on two bases:

#### (a) The Basic Load.

I have estimated the capital expenditures which would be required each year if annual requirements of gas remain static at the present level. I have determined what additional investments would be required if there were to be no increase in production—in other words, the additional capital investments which would be required to produce and gather the same volumes of gas which the Company is now marketing. This study was not made with an idea that the load will remain static. We know that it will not do so. The present production was used as a base so that proper additions could be made for the increasing loads which the Company anticipates.

#### (b) The Anticipated Load.

After estimating the capital expenditures which will be required for the basic load each year (considering the present production as the basic load), I then estimated the additional investments which will be required each year to take care of the anticipated load. The anticipated load is

n. Construct additional gathering lines to serve new wells in Hugoton Field, costing	151,887
Total	473,636
Less credit on acid treatment from joint owner of 4 wells	3,100
Net expenditures	470,536

[fol. 13175]

1944

a. Drill 5 wells in Panhandle Field, including acidization and liners, costing	\$ 103,967
b. Install liners in 4 old wells in Panhandle Field, costing	2,079
c. Install tubing in 4 old wells in Panhandle Field, costing	9,756
d. Acidize 6 old wells in Panhandle Field, costing	9,300
e. Lay well lines connecting 5 new wells in Panhandle Field, costing	15,071
f. Construct 5 measuring stations in Panhandle Field, costing	3,450
g. Construct additional gathering lines serving new wells in Panhandle Field, costing	27,450
h. Drill 4 wells in Hugoton Field (3 in Oklahoma and 1 in Kansas), costing	75,444
i. Install liners in 2 old wells in Hugoton Field (both 50% owned), costing	1,018
j. Construct well lines to connect 3 Oklahoma wells (the new Kansas well to be served by Argus), costing	2,593
k. Construct 3 measuring stations in Hugoton Field, costing	2,070
l. Construct additional gathering lines to serve new wells in Hugoton Field, costing	269,570
Total	521,768
Less credit on liners paid by joint owner	509
Net expenditures	521,259

1945

a. Install liners in 4 old wells in Panhandle Field, costing	2,519
b. Install tubing in 2 old wells in Panhandle Field, costing	4,400
c. Acidize 5 old wells in Panhandle Field, costing	7,750
[fol. 13176] d. Install 2 additional 1300 H.P. units at Sneed Station with additional scrubber, cooling tower and auxiliary engine, costing	\$ 362,800
e. Drill 4 wells in Hugoton Field (2 in Kansas and 2 in Oklahoma), costing	75,390
f. Install liners in 3 old wells in Hugoton Field (one 50% owned), costing	1,490
g. Install tubing in 2 old wells in Hugoton Field (50% owned), costing	3,854
h. Acidize 4 old wells in Hugoton Field (50% owned), costing	6,200
i. Construct well lines to connect 4 new wells in Hugoton Field, costing	11,279
j. Construct 4 measuring stations in Hugoton Field, costing	2,700

- k. Construct additional gathering lines to serve new wells in Hugoton Field, costing 85,800

Total 564,278

Less credit for contribution by joint owner for acidization, liners and tubing 5,185

Net expenditures 559,093

1946

- a. Install liners in 2 old wells in Panhandle Field, costing 1,320  
 b. Install tubing in 2 old wells in Panhandle Field, costing 4,556  
 c. Acidize 3 old wells in Panhandle Field, costing 4,650  
 d. Construct one additional dwelling Zofness Camp, costing 6,000  
 e. Drill 15 wells in Hugoton Field (10 in Oklahoma and 5 in Kansas, costing 282,485  
 f. Construct well lines to connect 15 new wells in Hugoton Field, costing 46,865  
 g. Construct 15 measuring stations in Hugoton Field, costing 10,350  
 [Vol. 13177] h. Construct additional gathering lines to serve 15 wells in the Hugoton Field, costing 264,407

Total expenditures \$ 620,633

The foregoing tabulations, aggregating \$4,983,423, represent the capital expenditures which would be required by the end of 1946 for additional facilities in the wells and gathering lines of Panhandle Eastern Pipe Line Company, if its load were not increased beyond the present annual demand. I have used that estimate as a base for determining the capital expenditures which will probably be required over that same period of time by way of additions to the production and gathering facilities, in order to permit the Company to deliver to its main pipe line the volumes of gas which Mr. Morton has estimated will be required during that same period. I now present tabulations based on such estimates.

b. Anticipated Load

Last Six Months of 1941

- a. Construct and install specially designed liquid separator between Sneed and Hansford Stations in Texas (now being installed), costing \$ 26,300  
 b. Construct 2 individual well compressors at Burnett Well No. 108 and Bivins Well No. 91 in Panhandle Field (now being constructed), costing 2,100  
 c. Construct warehouse at Zofness Camp (completed in August 1941), costing 500  
 d. Drill well near Guymon, Oklahoma, in Hugoton Field, costing 18,851

j. Construct well lines connecting 5 Oklahoma wells and 5 Kansas wells, costing	16,830
k. Construct 10 measuring stations in Hugoton Field, costing	6,900
l. Construct additional gathering lines serving new wells in Hugoton Field, costing	207,951
m. Construct and install 5 well dehydrators in Hugoton Field, costing	1,250
<b>Total</b>	<b>612,365</b>
Less credit contribution by joint owner on liners	509
<b>Net expenditures</b>	<b>611,856</b>

## 1945

a. Install liners in 4 old wells in Panhandle Field, costing	2,519
b. Install tubing in 2 old wells in Panhandle Field, costing	4,400
c. Acidize 5 old wells in Panhandle Field, costing	7,750
d. Drill 10 wells in Hugoton Field (5 in Kansas and 5 in Oklahoma), costing	188,230
e. Install liners in 3 old wells in Hugoton Field (one 50% owned), costing	1,490
f. Install tubing in 2 old wells in Hugoton Field (both 50% owned), costing	3,854
g. Acidize 4 old wells in Hugoton Field (all 50% owned), costing	6,200
h. Construct well lines to connect 10 new wells in Hugoton Field, costing	36,234
[fol. 13182]- i. Construct 10 measuring stations in Hugoton Field, costing	6,900
j. Construct additional gathering lines to serve new wells in Hugoton Field, costing	135,257
<b>Total</b>	<b>392,000</b>
Less credit contribution for joint owner account acidization, liners and tubing	5,185
<b>Net expenditures</b>	<b>387,715</b>

## 1946

a. Install liners in 2 old wells in Panhandle Field, costing	1,320
b. Install tubing in 2 old wells in Panhandle Field, costing	4,556
c. Acidize 3 old wells in Panhandle Field, costing	4,650
d. Construct 1 additional dwelling at Zofness Camp, costing	6,000
e. Drill 20 wells in Hugoton Field (10 in Kansas and 10 in Oklahoma), costing	376,800
f. Construct well lines to connect 20 new wells in Hugoton Field, costing	63,923
g. Construct 20 measuring stations in Hugoton Field, costing	13,800
h. Construct additional required gathering lines in Hugoton Field, costing	149,291
i. Construct new compressor station near town of Hugoton serving areas West of Hugoton, at cost of	362,398

j. Construct dehydration plant in connection with new compressor station, costing	70,000
k. Construct 4 dwellings for employees—1 at Optima and 3 at new Hugoton Compressor Station, costing	24,000
l. Construct 2 garages, a 3-car garage at Hugoton and a 2-car garage at Optima, costing	1,190
m. Purchase 2 additional automobiles, one for use in the Hugoton area and the other for use in the Optima area, at a cost of	1,837
[fol. 13183] n. New main station radio unit and eight 2-way radio units, costing	3,690
Total	1,083,445
Total expenditures under anticipated load	\$7,147,219

Thus, even if no gas were required over the next 5½ years in excess of the volumes now being marketed by the Company, additional capital expenditures in at least the sum of \$4,983,423 will be required by the end of 1946.

But, we know that larger volumes of gas will be required and that such increases, in large part, will be beyond the control of the Company. To serve present markets and the anticipated increases, capital expenditures in a more realistic figure will be required. To serve the existing markets, as well as anticipated increases, the capital expenditures required will be at least the sum of \$7,147,219.

#### Statistical Schedule:

Schedule 1 of Exhibit 43 is a recapitulation of the additional capital expenditures required each year during the period referred to in order to care for the basic load. Schedule 2 of the same exhibit is a similar recapitulation of the expenditures which will be required to care for the estimated loads. These estimates only relate to the additional capital expenditures required South and West of Liberal Compressor Station.

#### Prices Used:

The unit costs used by me for material required in connection with these expenditures are either those used in Mr. Biddison's 1941 Reproduction New Report, Exhibit 39, or the prices for similar units paid by the Company under its last purchase orders. Labor charges have been computed on the schedules now current. None of the estimates takes into consideration the indicated future price advances.



### Operation And Maintenance Expenses.

In addition to future capital expenditures, Panhandle Eastern will, in the future, be required to increase its operation and maintenance expenses, even to produce the same volumes of gas which it now produces. This necessity will result from lowered pressures and potentials in the gas fields, the increasing age of the physical properties, and the circumstance that the expenses incurred in connection with the Hugoton Field are greater in proportion to the volumes of gas produced than those now current in the Panhandle Field.

#### Schedules Discussed:

On Schedule 3, Pages 1, 2 and 3 of Exhibit 43, I have shown my estimate of operation and maintenance expenses which will be incurred in the Panhandle Field and in the Hugoton Field, respectively, over the period already described in order for the Company to produce and deliver to the main pipe line at Liberal Compressor Station the "basic load"; that is, an amount of gas equivalent to the volumes now being so produced and delivered.

On Schedule 4, Pages 1, 2 and 3 of the same exhibit, I [fol. 13185] show the operation and maintenance expenses in those fields which I estimate will be required to so produce and deliver the anticipated requirements, that is, the volumes of gas which Mr. Morton has estimated will be needed to fulfill Panhandle Eastern's market requirements over the same period.

It will be noted that these schedules show the expenses incurred during 1940 and 1941 for comparison with those which are expected during the years 1942 to 1946. The 1940 figures are the expenses actually incurred by the Company during 1940. The 1941 figures reflect the actual expenses incurred during the first six months of the year and the estimated expenses during the last six months. These expenses so shown in Schedules 2 and 3 do not reflect any administrative or other general overhead Company expense. The general office expenses included are only those directly applicable to the activities of the production and gathering system.

### Rising Price Levels:

I recognize that rising price levels will materially increase the cost of equipment heretofore purchased, but, since I have made no study with respect to the amount of such increased prices, I have not taken future price levels into consideration, but have assumed a continuance of present prices with respect to both material and labor. No consideration has been given probable increases in tax rates. All add valorem taxes have been computed on the assumption that the average rates over the past five years will continue.

### Aggregate Future Production From Texas Leases.

In connection with my study of the Panhandle Field, I have estimated the volumes of gas which Panhandle Eastern will be able to take from its owned leases in the Panhandle Field through the year 1956. In arriving at this estimate, I have taken into consideration the requirements of the main line through 1946 and have assumed that the Company will continue to take from the reserves in the Panhandle Field the same proportion of the market outlet which it now takes, so long as the wells drilled in that field will deliver such proportions. Under this apportionment, the maximum amount to be taken by Panhandle Eastern from the Panhandle Field during any one year would be 60 billion cubic feet.

I have then apportioned the withdrawals between wells belonging to Panhandle Eastern and wells belonging to other producers with whom it holds gas purchase contracts, on approximately the same percentage as is now being used in determining well allowables.

Following 1946, I made no allowance for increasing production from the Panhandle Field, but recognized that as the years go by the volumes in that field will become less and less irrespective of the increases which Panhandle Eastern may have in its aggregate market requirements. I also recognized that as the years go by a greater percentage of aggregate volumes taken from the Panhandle Field will be produced by Panhandle Eastern's own wells, with

e.	Purchase new automobile for use of field forces in Hugoton Field, costing	919
f.	Construct Cimarron River ditches to protect present river crossing from high water, costing	6,500
	Total	55,170

[fol. 13178]

1942

a.	Drill 5 wells in Panhandle Field, including acidization and liners, at a cost of	\$ 106,463
b.	Install liners in 2 old wells in Panhandle Field, at a cost of	916
c.	Install tubing in 2 old wells in Panhandle Field, costing	4,262
d.	Acidize 4 old wells in Panhandle Field, costing	7,750
e.	Lay well lines for 5 new wells in Panhandle Field, costing	15,395
f.	Construct 5 measuring stations for new wells in Panhandle Field, costing	3,459
g.	Construct trunk gathering line, looping present line from Hansford Station South 31.1 miles, costing	672,133
h.	Increase capacity of present gathering line by looping existing lines and additional gathering lines, costing	422,464
i.	Install 2,600 additional H.P. at Sneed Station and increase cooling tower capacity, 1 additional auxiliary engine and one scrubber, costing	362,800
j.	Install 1300 H.P. at Hansford Station, costing	121,200
k.	Construct 12 additional dwellings for employees, including 3 at Zofness, 3 at Hansford and 6 at Sneed, one of the Hansford dwellings being a 10-room hotel for single employees, at a cost of	81,000
l.	Build 3 garages, a 3-car garage at Hansford, a 3-car garage at Sneed and a 6-car garage at Zofness, costing	2,760
m.	Drill 19 wells in Texas County, Hugoton Field, including liners and acidization, at a cost of	358,169
n.	Install liners in 2 old wells in Hugoton Field, at a cost of	762
o.	Acidize 4 old wells in Hugoton Field, costing	15,500
p.	Construct Cimarron River Crossing for loop line, costing	220,384
q.	Construct trunk gathering line from Liberal toward Hansford, looping existing line approximately 32 miles, at cost of	\$50,048

[fol. 13179]

r.	Construct gathering line from Section 31, Township 4, to near Optima in Texas County, Oklahoma, costing	\$ 324,180
s.	Construct gathering line in Oklahoma, connecting with the Optima line, at cost of	\$56,606
t.	Construct well lines for 20 new wells, costing	47,610
u.	Construct and install 10 well dehydrators, at cost of	2,500
v.	Construct 20 measuring stations, at cost of	13,800
w.	Construct 3 houses for employees at Optima Camp, costing	18,000
x.	Construct office building at Hugoton Camp, costing	7,000
y.	Construct warehouse at Optima Camp, costing	1,000
z.	Construct one 6-car garage at Optima Camp, costing	1,380
z-1	Construct telephone line to serve at Optima gathering line, costing	10,836
z-2	Install 2-way radio station to serve area within 50 mile radius of Hugoton, costing	3,030

2-3 Purchase 3 automobiles (coupes) for serving portions of Hugoton Field, costing	2,756
2-4 Purchase 1-ton truck for Oklahoma area, costing	1,072
Total	4,535.220
Less credit on acid treatment from joint owner	4,650
Net expenditures	4,530.570

## 1943

a. Drill 5 wells in Panhandle Field, including acidization and liners, costing	110,631
b. Install liners in 3 field wells in Panhandle Field, costing	1,746
c. Install tubing in 2 old wells in Panhandle Field, costing	4,528
d. Acidize 5 old wells in Panhandle Field, costing	7,750
[col. 13180] e. Construct well lines for 5 new wells in Panhandle Field, costing	\$ 23,335
f. Construct 5 measuring stations in Panhandle Field, costing	3,450
g. Construct additional gathering lines to serve new wells in Panhandle Field, costing	7,815
h. Drill 12 wells in Hugoton Field (10 in Oklahoma and 2 in Kansas), costing	226,292
i. Install liners in 2 old wells in Hugoton Field, costing	796
j. Acidize 8 old wells in Hugoton Field (4 being 50% owned), costing	12,400
k. Construct well lines connecting 10 Oklahoma wells (2 Kansas well lines being built by Argus), costing	20,710
l. Construct 10 measuring stations in Hugoton Field, costing	6,900
m. Construct and install 10 well dehydrators, costing	2,500
n. Construct additional gathering lines serving new Hugoton wells, costing	52,710
Total	481,563
Less credit on acid treatment by joint owner	3,100
Net expenditures	478,463

## 1944

a. Drill 5 wells in Panhandle Field, including acidization and liners, costing	103,967
b. Install liners in 4 old wells in Panhandle Field, costing	2,079
c. Install tubing in 4 old wells in Panhandle Field, costing	9,756
d. Acidize 6 old wells in Panhandle Field, costing	9,390
e. Lay well lines connecting 5 new wells in Panhandle Field, costing	45,071
f. Construct 5 measuring stations in Panhandle Field, costing	3,450
[col. 13181] g. Construct additional gathering lines serving new wells in Panhandle Field, costing	\$ 27,450
h. Drill 11 wells in Hugoton Field (5 in Oklahoma and 6 in Kansas), costing	207,353
i. Install liners in 2 old wells in Hugoton Field (both 50% owned), costing	1,018

lesser percentages produced from gas purchase wells, due to differences in probable pressures and potentials and to the further circumstance that the economics of its project might permit Panhandle Eastern to install well booster stations in connection with its wells, whereas the economics of some others holding gas purchase contracts might not justify such expenditure. Allowing for these various elements, I have estimated the volumes of gas which Panhandle Eastern will probably be able to produce from its [fol. 13187] own wells and wells under gas purchase contracts during the period ending December 31, 1956. That estimate is presented on Schedule 5 of Exhibit

#### Abandonment Of Panhandle Field

Panhandle Eastern must face the fact that the time will come when it will not be economically advisable for it to attempt to continue its production operations in the Panhandle Field. When that time will come cannot, with certainty, be determined. The many competitive interests producing from that field, the probabilities of the future requirements of all of such competitive interests, the irregularity in the existing pressure and production patterns, and many other elements make a definite determination of the necessary abandonment point impossible. While this is true, it is also true that past and present trends indicate within a reasonable degree of certainty what may be expected in the future. I have, for several years, been carefully watching and considering these trends and their effect in the areas from which Panhandle Eastern is taking gas. My duties make it necessary for me continuously to study existing trends in arriving at the recommendations which I make to the management with respect to further and future operations in that field. We must, of course, plan for the future with the hope of producing the most gas which we can economically take from the field and yet we cannot afford to make expenditures in the field which will not be justified by the volumes of the gas which we may reasonably expect to thereafter produce. It has been necessary, therefore, in my estimates of future production from the field to take into consideration all known factors which would in any way have an influence on the point at which it will not become economic for this Company longer to utilize its facilities in the Panhandle Field.



[fol. 13188] While it is frequently the case that reserves in a field or reserves under particular leases are computed on assumed abandonment pressures and with allowances of assumed recovery percentages, such a rule cannot be applied with certainty to this field, or, in my opinion, to any particular company in this field in determining the point at which it ceases to produce gas. Different companies will be differently situated. Some may be able to produce at a much lower abandonment pressure than the economics of other companies will justify. This is especially true with respect to pipe lines which serve local areas or pipe lines whose operating pressures can be substantially lower than those which may be required by the economics of other companies. Also, those producing gas for manufacture of carbon black or other products do not require gas at high pressures, since the plants are located in the field, and may be able to take gas at very low pressures.

After a careful study of Panhandle Eastern's reserves, its gathering lines and its operating problems, I have reached the conclusion that it may be able to continue to produce some of its wells down to approximately 50 pounds wellhead pressure. The probability is that many wells owned by this Company may be abandoned at substantially higher pressures, since the deliverability of gas from gas wells varies even at the same pressures, and a determination of the amount of gas which the Company can actually take from a well at a given time is of greater importance than a determination of the existing pressure at that particular well.

In making my study of the point at which it will probably not be economic for Panhandle Eastern to further operate in the Panhandle Field, I first divided the area from which [fol. 13189] it takes gas into seven producing areas. Exhibit 46 is a map showing those separate areas. I did this so that a careful and detailed study might be made of the various areas from the standpoint of past pressures, potentials and gas deliverability. I also took into consideration the gathering lines which Panhandle Eastern now has in the Panhandle Field serving those different areas.

I then determined the pressure record and rates of withdrawal of each area, giving consideration to the rate of de-

development during the past six years, the number of undrilled units remaining in each area and estimates of geologists with respect to the acre gas content, on the assumption that the average per acre gas content of the better area of the field is approximately that of Panhandle Eastern's reserves.

I then developed a pressure decline curve for each of the group areas and determined the deliverability of gas at various operating pressures from the wells located in those areas. This gave me a good idea of the volumes of gas which might be expected from the various wells at such well pressures as may hereafter exist. This was, of course, on the assumption that the physical condition of the wells would not change.

After having made this study of each individual area, I developed a pressure trend curve for the field as a whole, based on past performances and on the assumption that the pressure reports of the Texas Railroad Commission are accurate. I obtained the best information I could with respect to the volumes of gas which have been produced [fol. 13190] from the field during various pressure periods and applied that information in developing the pressure trend curve.

I realized that an average trend curve for the field as a whole could not be applied directly to all the areas involved, but felt that it would exert a substantial influence on the declining pressures in each of the areas. I recognized that the rate of production would be different in the different areas and that similar amounts of production from each area would not result in the same pressure drops. Therefore, taking the pressure trend curve for the field as a whole as a base, I prepared my own estimate of the pressure trends in the seven producing areas referred to, thus reaching a conclusion as to the pressures which will probably exist in each of those areas at different times, based on my best judgment with respect to the production which will be taken from those areas.

I reached the conclusion that the pressures in these areas will probably reach the approximate pressure of 50 pounds at different periods during the years 1956 to 1960 and, therefore, that if 50 pounds be the actual abandonment

pressure, it would not be economic for the Company to continue to produce from those areas after those dates.

Considering the areas as a whole, I reached the conclusion that during 1957 the Company probably will not be able to produce more than 5 billion cubic feet from both the gas purchase reserves and the owned reserves, of which approximately 3,453,000 cubic feet will be taken from its own reserves. These probable limits will continue to decrease, so that by 1960 it would probably not be able to produce more than approximately 2 billion cubic feet, all of which will probably be taken from its own wells.

[fol. 13191] Whether it will be economical for this Company to continue to produce gas after the deliverability declines to 7 billion cubic feet in 1956 is problematical. At that time it probably cannot take more than approximately 4.8 billion cubic feet from its own wells annually, or an average of approximately 181 MCF daily from each of its 72 wells. Whether it can at that time continue further to utilize its facilities in the Panhandle Field is doubtful. Certainly any further reductions in the volumes it can expect to produce from its wells will make it less and less advisable to continue to incur the necessary operation and maintenance expenses required to operate in that field.

Therefore, it is my judgment that Panhandle Eastern will not be justified in further producing gas from its reserves in the Panhandle Field longer than 15 years from the present.

Exhibit 44 is a map, prepared by me, showing the development program as to both new wells and gathering facilities which will be required by the end of 1946, if the market requirements of Panhandle Eastern remain at their present level—in other words, without giving consideration to increased market requirements.

Exhibit 45 is a similar map, prepared by me, showing the development program which will be required in connection with the drilling of wells and furnishing gathering facilities to meet the added market requirements estimated by Mr. Morton.

The legends on these maps, found in the lower right hand corner of each, are self-explanatory. A different color is used to indicate the development required each year. Acreage under lease by the Company which will be [fol. 13192] drilled in later years of the project is also show on these maps and acreage under gas purchase contracts is also appropriately shown.

[fol. 13193]

## Exhibit 43.

### Schedules Presented in Connection With the Testimony of C. H. Hinton.

[fol. 13194]

## Schedule 1

#### Additional Capital Expenditures Required To Produce And Gather Basic Load, Or Present Requirements

Line No.	Period (A)	Amount (B)
1	1941 (last 6 months)	\$ 55 170
2	1942	2 756 732
3	1943	470 536
4	1944	521 259
5	1945	559 093
6	1946	620 633
7	Total	<u>\$4 983 423</u>

[fol. 13195]

## Schedule 2

#### Additional Capital Expenditures Required To Produce And Gather Anticipated Increased Load

Line No.	Period (A)	Amount (B)
1	1941 (Last 6 months)	\$ 55 170
2	1942	4 530 570
3	1943	478 463
4	1944	611 856
5	1945	387 715
6	1946	1 083 445
7	Total	<u>\$7 147 219</u>

Estimate Of Operation And Maintenance Costs West  
(Note: 1940 actual, 1941 six months actual)

Line No.	Department (A)	1940 (B)	1941 (C)	1941 (D)
1	Transmission			
2	Operation	\$18 912	\$23 132	\$24 9
3	Maintenance	6 269	9 649	12 0
4	Total	24 281	32 781	37 0
5	Measurement			
6	Company Operation	9 290	7 075	8 4
7	Company Maintenance	1 313	1 072	1 2
8	Purchase Operation	5 945	5 610	6 3
9	Purchase Maintenance	413	450	5
10	Total	16 961	14 207	16 5
11	Compressor			59 4
12	Operation — Hansford		51 498	73 1
13	Maintenance — Hansford		11 395	11 9
14	Operation — Sneed	71 882	87 333	103 2
15	Maintenance — Sneed	11 857	12 471	12 7
16	Total	83 739	162 397	187 4
17	Production			20 1
18	Operation	22 239	21 657	21 5
19	Maintenance	11 821	7 990	9 0
20	Total	34 060	29 647	30 5
21	Land and Lease			
22	Operation	5 699	3 810	3 8
23	Royalties	101 182	132 882	139 9
24	Rents	325	325	3
25	Delay Rentals	12 544	9 411	41 0
26	Renewal Bonus	8 000	4 873	
27	Total	127 750	151 301	153 0



## Schedule 3

Page 1

Witness Hinton

Of Liberal Panhandle Field — Basic Load  
ual and six months estimated)

	1943 (E)	1944 (F)	1945 (G)	1946 (H)	Total 5 years 1942 - 1946 (I)
2	\$25 970	\$26 283	\$26 200	\$26 200	\$ 129 815
50	12 485	12 685	13 085	13 085	63 390
2	38 455	38 968	39 375	39 375	193 205
14	11 564	12 217	12 749	13 306	58 250
04	1 794	1 886	1 932	1 981	8 887
16	6 586	6 868	7 162	7 470	34 402
12	534	557	581	606	2 790
36	20 478	21 528	22 424	23 363	104 329
70	59 861	60 271	60 710	61 207	301 528
70	<u>78 511</u>	<u>79 671</u>	<u>85 510</u>	<u>86 007</u>	<u>402 879</u>
64	12 563	13 191	13 850	14 543	66 111
57	108 604	112 987	126 884	132 348	584 080
80	13 419	14 089	14 794	15 534	70 616
80	194 447	200 538	216 238	223 632	1 022 335
50	<u>213 067</u>	<u>219 938</u>	<u>244 038</u>	<u>248 422</u>	<u>1 122 685</u>
00	22 897	24 500	26 300	27 100	122 200
50	10 300	11 750	13 300	14 100	58 500
50	33 100	36 250	39 600	41 200	180 700
00	3 800	3 800	3 800	3 800	19 000
02	144 889	149 369	152 027	174 074	760 261
25	325	325	325	325	1 625
31	6 861	4 932	3 097	3 097	29 018
		800	2 050	800	3 650
58	155 875	159 226	161 299	182 036	813 554

**MICRO CARD 22**

TRADE MARK 

**44**

**1568<sup>2</sup>**



**63**



## Estimate Of Operation And Maintenance Costs West O

(Note: 1940 actual, 1941 six months actual)

Line No.	Department (A)	1940 (B)	1941 (C)	1942 (D)
1	Transmission			
2	Operation	\$ 20 339	\$ 27 074	\$ 32 075
3	Maintenance	5 923	7 943	12 474
4	Total	26 262	35 017	44 549
5	Measurement			
6	Company Operation	7 807	8 238	11 603
7	Company Maintenance	1 314	1 611	2 421
8	Purchase Operation	6 380	6 255	6 833
9	Purchase Maintenance	749	764	820
10	Total	16 250	16 868	21 686
11	Compressor			
12	Operation			
13	Maintenance			
14	Operation			
15	Maintenance			
16	Total			
17	Production			
18	Operation	14 042	16 573	17 373
19	Maintenance	3 492	5 470	6 450
20	Total	17 534	22 043	23 823
21	Land and Lease			
22	Operation	7 447	7 712	7 500
23	Royalties	41 698	42 072	45 775
24	Rents			
25	Delay Rentals	76 514	80 314	91 504
26	Renewal Bonus	4 286	5 641	15 075
27	Total	129 945	135 739	159 852
28	Taxes			
29	Ad Valorem		59 022	60 308
30	Gross Production		3 937	5 528
31	Total		62 960	65 836
32	Grand Total	\$189 991	\$272 627	\$315 740

Schedule 3  
Page 3  
Witness Hinton

Liberal Hugoton Field — Basic Load  
(and six months estimated.)

1943 (E)	1944 (F)	1945 (G)	1946 (H)	Total 5 Years 1942-1946 (I)
\$ 32 235 12 755	\$ 35 195 16 485	\$ 35 195 16 135	\$ 35 490 16 410	\$ 170 190 74 259
44 990	51 680	51 330	51 900	244 449
12 878	14 338	15 964	18 662	73 445
2 662	2 911	3 264	3 804	15 092
7 124	7 218	7 525	7 845	36 545
862	896	931	968	4 486
23 526	25 393	27 684	31 279	129 568
29 223	21 823	21 672	21 008	102 100
6 900	7 500	7 950	8 300	37 100
27 123	29 323	29 623	29 308	139 200
8 000	8 560	8 500	8 500	41 000
47 979	49 223	50 556	55 353	248 884
89 426	87 466	86 266	85 146	439 808
49 111	6 360	2 143	27 439	100 128
194 516	151 549	147 465	176 438	829 820
83 166	85 924	90 493	92 604	111 895
6 810	7 520	7 909	9 775	37 42
89 976	93 444	98 402	101 779	449 437
\$380 131	\$351 389	\$354 504	\$390 704	\$1 792 474

[fol. 13202]

Schedule 5

Witness Hinton

Probable Production From Panhandle Eastern's Own Wells And Wells  
Under Gas Contracts (Panhandle Field) During The Period  
July 1, 1940 To December 31, 1956

M C F

Line No.	Period (A)	Panhandle Eastern Wells (B)	Gas Purchase Wells (C)
1.	1941 (Last 6 months)	11 811 800	10 182 000
2.	1942	27 635 000	22 365 000
3.	1943	30 909 000	23 100 000
4.	1944	32 455 000	22 545 000
5.	1945	36 036 000	23 964 000
6.	1946	36 024 000	23 976 000
7.	1947	36 024 000	23 976 000
8.	1948	36 186 000	23 514 000
9.	1949	33 363 000	21 637 000
10.	1950	30 505 000	19 495 000
11.	1951	27 612 000	17 588 000
12.	1952	24 984 000	15 016 000
13.	1953	20 339 000	11 611 000
14.	1954	14 225 000	7 775 000
15.	1955	6 576 000	3 424 000
16.	1956	4 834 200	2 166 000

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[fol. 13206]

Exhibit 47

Panhandle Eastern Pipe Line Company And Subsidiary Company  
Future Capital Requirements Gas Transmission Facilities  
Liberal Station And Eastward

Line No.	(A)	(B)
1	1941	
2	Additions to Main Lines	\$ 4 292 500
3	Additions to Compressor Stations	344 100
4	So. Michigan North Line	3 893 300
5	Lateral Lines	463 800
6		8 993 700
7	1942	
8	Additions to Main Lines	2 526 900
9	Additions to Compressor Stations	1 593 900
10	Additions to Gasoline and Dehydration Equipment	120 000
11	S. Michigan West Line	1 766 000
12	Telephone Line East	522 800
13	Lateral Lines	254 200



Estimate Of Operation And Maintenance Costs — West Of Liberal Panhandle Field — Estimated Future Load  
(Note: 1940 actual, 1941 six months actual and six months estimated)

Line No.	Department (A)	1940 (B)	1941 (C)	1942 (D)	1943 (E)	1944 (F)	1945 (G)	1946 (H)	Total 5 years 1942-1946 (I)
1	Transmission								
2	Operation	\$18 612	\$ 23 131	\$ 26 235	\$ 26 770	\$ 27 078	\$ 27 078	\$ 27 078	\$ 134 239
3	Maintenance	6 269	9 649	12 741	13 365	13 530	13 920	13 920	67 476
4	Total	24 881	32 780	38 976	40 135	40 608	40 998	40 998	201 715
5	Measurement								
6	Company Operation	9 289	7 075	8 414	11 564	12 217	12 749	13 306	58 250
7	Company Maintenance	1 313	4 072	1 294	1 794	1 886	1 932	1 981	8 887
8	Purchase Operation	5 945	5 609	6 316	6 586	6 868	7 162	7 470	34 402
9	Purchase Maintenance	413	449	512	534	557	581	606	2 790
10	Total	16 960	14 205	16 536	20 478	21 528	22 424	23 363	104 329
11	Compressor			73 179	78 511	79 671	85 510	86 007	402 878
12	Operation — Hansford		51 498	<del>59 479</del>	<del>59 861</del>	<del>60 274</del>	<del>60 740</del>	<del>61 207</del>	<del>201 528</del>
13	Maintenance — Hansford		11 395	11 964	12 563	13 191	13 850	14 543	66 111
14	Operation — Sneed	71 881	87 332	117 150	129 397	136 249	153 007	160 125	695 928
15	Maintenance — Sneed	14 856	12 171	12 779	13 418	14 089	14 794	15 534	70 614
				215 072	233 880	243 200	267 161	276 209	1 235 531
16	Total	83 737	162 396	<del>204 372</del>	<del>215 239</del>	<del>223 438</del>	<del>242 361</del>	<del>251 400</del>	<del>1 131 174</del>
17	Production								
18	Operation	22 238	21 657	21 500	22 800	24 500	26 300	27 100	122 200
19	Maintenance	11 821	7 989	9 650	10 300	11 750	13 300	14 100	58 500
20	Total	34 059	29 646	30 550	33 100	36 250	39 600	41 200	180 700
21	Land and Lease								
22	Operation	5 699	3 809	3 800	3 800	3 800	3 800	3 800	19 000
23	Royalties	101 182	132 882	155 447	173 867	182 562	202 703	232 099	946 678
24	Rents	325	325	325	325	325	325	325	1 625
25	Delay Rentals	12 544	9 411	11 030	6 860	4 932	3 097	3 097	29 016
26	Renewal Bonus	8 000	4 873			800	2 050	800	3 650
27	Total	127 750	151 300	170 602	184 852	192 419	211 975	240 121	999 969

Estimate Of Operation And Maintenance Costs West Of Liberal Hugoton Field — Estimated Future Load  
(Note: 1940 Actual, 1941 six months actual and six months estimated.)

Line No.	Department (A)	1940 (B)	1941 (C)	1942 (D)	1943 (E)	1944 (F)	1945 (G)	1946 (H)	Total 5 Years 1942 - 1946 (I)
1	Transmission								
2	Operation	\$ 20 339	\$ 27 074	\$ 37 260	\$ 38 450	\$ 39 550	\$ 42 250	\$ 44 350	\$201 860
3	Maintenance	5 923	7 943	12 545	13 085	13 555	15 590	16 740	71 515
4	Total	26 262	35 017	49 805	51 535	53 105	57 840	61 090	273 375
5	Measurement								
6	Company Operation	7 807	8 238	12 200	13 973	15 633	17 357	20 057	79 220
7	Company Maintenance	1 314	1 611	2 544	2 887	3 264	3 530	4 070	16 295
8	Purchase Operations	6 380	6 255	6 851	7 124	7 218	7 525	7 845	36 563
9	Purchase Maintenance	749	764	829	862	878	931	968	4 468
10	Total	16 250	16 868	22 424	24 846	26 993	29 343	32 940	136 546
11	Compressor								
12	Operation — Hugoton	—	—	—	—	—	—	23 832	23 832
13	Maintenance — Hugoton	—	—	—	—	—	—	6 250	6 250
14	Total	—	—	—	—	—	—	30 082	30 082
15	Production								
16	Operation	14 045	16 572	16 223	18 983	21 283	21 343	20 143	97 975
17	Maintenance	3 492	5 470	6 450	6 900	7 500	7 950	8 300	37 100
18	Total	17 537	22 042	22 673	25 883	28 783	29 293	28 443	135 075
19	Land and Lease								
20	Operation	7 447	7 712	7 500	8 000	8 500	8 500	8 500	41 000
21	Royalties	41 698	42 072	53 207	59 860	74 035	76 498	115 147	378 747
22	Rents	—	—	—	—	—	—	—	—
23	Delay Rentals	76 514	80 314	91 504	87 827	84 707	81 107	77 707	422 852
24	Renewal Bonus	4 286	5 641	10 791	46 292	6 360	2 143	26 560	92 246
25	Total	129 945	135 739	163 002	201 979	173 602	168 248	228 014	934 845
26	Taxes								
27	Ad Valorem	—	59 022	60 309	91 665	93 046	96 688	99 483	441 191
28	Gross Production	—	3 937	7 722	10 379	13 742	14 675	23 387	69 905
29	Total	—	62 959	68 031	102 044	106 788	111 363	122 870	511 096
30	Grand Total	\$189 994	\$272 625	\$325 935	\$406 287	\$389 271	\$396 087	\$503 439	\$2 021 019

Estimate Of Operation And Maintenance Costs West of Liberal Panhandle Field -- Basic Load  
(Continued)

(Note: 1940 actual, 1941-six months actual and six months estimated)

Line No.	Department (A)	1940 (B)	1941 (C)	1942 (D)	1943 (E)	1944 (F)	1945 (G)	1946 (H)	Total 5 years 1942-1946 (I)
1	Dehydration Plant								
2	Sneed								
3	Operation	\$ —	\$ 4 756	\$ 4 878	\$ 4 878	\$ 4 878	\$ 4 878	\$ 4 878	\$ 24 390
4	Maintenance	—	611	642	674	708	743	780	3 547
5	Total	—	5 367	5 520	5 552	5 586	5 621	5 658	27 937
6	Taxes								
7	Ad Valorem	—	25 440	25 631	29 935	30 748	31 835	31 835	149 984
8	Gross Production	—	37 614	39 601	41 013	42 281	43 033	49 274	215 202
9	Total	—	62 754	65 232	70 948	73 029	74 868	81 109	365 186
10	Grand Total	\$286 791	\$458 454	497 408	518 855	535 125	559 425	596 433	2 707 246
				<del>\$511 108</del>	<del>\$537 505</del>	<del>\$554 625</del>	<del>\$574 226</del>	<del>\$624 243</del>	<del>\$2 808 506</del>

Rate Of Operation And Maintenance Costs -- West Of Liberal Panhandle Field -- Estimated Future Load  
(Continued)

(Note: 1940 actual, 1941 six months actual and six months estimated)

1940 (B)	1941 (C)	1942 (D)	1943 (E)	1944 (F)	1945 (G)	1946 (H)	Total 5 years 1942 - 1946 (I)
\$ —	\$ 4 756 611	\$ 5 404 725	\$ 5 836 787	\$ 5 945 804	\$ 6 485 874	\$ 6 485 878	\$ 30 155 4 068
—	5 367	6 129	6 623	6 749	7 359	7 363	34 223
—	25 140	25 461	29 466	30 278	31 365	31 365	147 635
—	37 614	44 001	49 215	51 677	57 378	65 698	267 969
—	62 754	69 162	78 681	81 955	88 743	97 063	415 604
—	—	547 027	597 758	622 709	678 260	726 317	3 172 071
\$286 787	\$458 448	<del>\$533 327</del>	<del>\$570 108</del>	<del>\$603 309</del>	<del>\$653 460</del>	<del>\$701 517</del>	<del>\$3 070 721</del>





14	Warehouse Paola	7 500
15		<hr/> 6 791 300 <hr/>
16	1943	
17	Additions to Compressor Stations	3 482 800
18	Additions to Gasoline and Dehydration Equipment	286 000
19		<hr/> 3 768 800 <hr/>
20	1944	
21	Additions to Main Lines	6 228 600
22	Additions to Compressor Stations	455 500
23		<hr/> 6 684 100 <hr/>
24	1945	
25	Additions to Main Lines	6 329 600
26	Additions to Compressor Stations	637 500
27	Additions to Gasoline and Dehydration Equipment	120 000
28		<hr/> 7 087 100 <hr/>
29	1946	
30	Additions to Main Lines	2 388 100
31	Additions to Compressor Stations	1 229 500
32		<hr/> 3 617 600 <hr/>
33	Total	<hr/> <b>36 942 600</b> <hr/>

## Panhandle Eastern Pipe Line Company and Subsidiary Companies

A s s e t s  
D e c e m b e r 3 1

Line No.	Item (A)	1930 (B)	1931 (C)	1932 (D)	1933 (E)	1934 (F)	1935 (G)	1936 (H)	1937 (I)	1938 (J)
1	Gas Plant	\$44 432 256 86	\$55 414 134 62	\$45 606 714 20	\$45 625 712 23	\$45 525 157 54	\$45 495 363 07	\$49 863 521 83	\$60 977 186 19	\$61 214 797 0
2	Investments and Fund-Accounts									
3	Other Investments	200 169 09	200 169 09	190 784 68	187 724 68	180 240 68	1 00	150 146 84	199 430 77	225 898 0
4	Current and Accrued Assets									
5	Cash	713 599 28	430 459 43	456 864 60	494 528 10	498 968 73	726 495 15	963 219 16	1 546 962 47	1 396 964 8
6	Special Deposits	8 772 563 72	909 00	423 997 72	660 75	630 689 07	854 07	1 527 31	6 038 25	4 758 2
7	Working Funds (Petty Cash and Advances)	21 268 54	8 747 46	3 109 93	2 215 79	2 505 13	2 234 12	5 261 77	4 416 14	4 997 1
9	Notes Receivable	57 500 00	1 051 338 64	1 051 843 40	300 953 36	150 847 80	150 706 20	12 532 38	3 991 75	14 854 8
10	Accounts Receivable	181 501 89	365 109 83	364 238 03	373 714 29	383 272 01	489 507 74	996 229 66	971 532 85	1 126 143 5
11	Interest and Dividends Receivable	—	108 43	116 81	6 35	5 65	4 70	7 565 93	6 492 87	5 959 4
13	Material and Supplies	235 221 44	496 381 01	409 308 39	269 574 03	264 929 92	228 070 63	215 387 53	257 963 63	165 267 5
14	Prepayments	9 276 79	31 133 58	37 492 72	34 499 61	39 725 23	40 685 07	41 296 84	80 232 10	78 881 9
15	Total Current and Accrued Assets	9 990 931 66	2 384 187 38	2 746 971 60	1 476 152 28	1 970 943 54	1 638 557 73	2 243 020 58	2 877 630 06	2 797 827 5
16	Deferred Debits									
17	Amortized Debt Discount and Expense	2 026 261 70	1 968 010 43	1 860 157 13	1 702 747 90	1 601 091 34	1 406 686 22	1 267 225 96	3 173 881 35	2 854 201 8
19	Extraordinary Property Losses	—	—	279 538 39	358 095 27	409 467 63	11 752 17	11 752 17	—	—
20	Clearing Accounts	—	—	—	—	—	—	—	3 122 21	—
21	Retirement Work in Progress	—	73 490 86	3 320 48	10 106 56	6 931 20	6 964 81	146 11	—	—
22	Other Work in Progress	—	12 897 13	2 027 56	1 353 03	1 163 45	6 199 85	10 793 16	20 447 87	30 898 9
23	Other Deferred Debits	8 744 85	9 997 02	46 274 98	48 997 03	43 315 85	35 618 40	21 093 06	14 624 98	13 311 3
24	Total Deferred Debits	2 035 006 35	2 064 785 44	2 191 318 54	2 121 299 79	2 061 969 47	1 467 221 45	1 311 010 46	3 212 076 41	2 898 415 1
25	Reacquired Securities	—	—	—	—	—	—	—	454 000 00	—
26	Reacquired Long-Term Debt	—	—	—	—	—	—	—	—	—
27	Total Assets and Other Debits	\$56 658 364 16	\$60 063 276 53	\$50 735 780 02	\$49 410 888 98	\$49 738 311 23	\$48 601 143 25	\$53 567 699 71	\$67 720 323 43	\$67 136 937 81

## Balance Sheets — Per Books

ry. Companies

S

e r 3 1

	1936 (H)	1937 (I)	1938 (J)	1939 (K)	1940 (L)	June 30, 1941 (M)
3 07	\$49 863 521 83	\$60 977 186 19	\$61 214 797 04	\$61 838 380 91	\$66 906 389 76	\$66 689 669 51
1 00	150 146 84	199 430 77	225 898 06	228 791 91	235 598 10	214 298 25
5 15	963 219 16	1 546 962 47	1 396 964 87	5 479 321 37	3 744 194 06	7 032 361 41
4 07	1 527 31	6 038 25	4 758 25	5 028 25	9 125 75	1 489 127 23
4 12	5 261 77	4 416 14	4 997 18	8 419 45	9 189 00	10 330 24
6 20	12 532 38	3 991 75	14 854 84	16 020 60	2 150 63	—
7 74	996 229 66	971 532 85	1 126 143 55	1 280 529 32	1 445 442 03	1 053 701 35
4 70	7 565 93	6 492 87	5 959 40	5 237 70	3 801 78	1 423 87
0 68	215 387 53	257 963 63	165 267 50	159 321 97	212 314 42	268 861 88
5 07	41 296 84	80 232 10	78 881 97	84 806 27	64 918 68	135 113 86
7 73	2 243 020 58	2 877 630 06	2 797 827 56	7 038 684 93	5 491 136 35	9 990 919 84
6 22	1 267 225 96	3 173 881 35	2 854 204 85	2 539 351 98	2 229 322 74	2 101 985 62
2 17	11 752 17	—	—	—	—	—
	—	3 122 21	—	—	—	4 341 28
4 81	146 11	—	—	—	—	11 345 68
9 85	10 793 16	20 447 87	30 898 92	59 79	2 975 91	643 791 98
8 40	21 093 06	14 624 98	13 311 38	6 00	837 08	1 537 47
1 45	1 311 010 46	3 212 076 41	2 898 415 15	2 539 417 77	2 233 135 73	2 763 002 03
	—	454 000 00	—	—	—	—
3 25	\$53 567 699 71	\$67 720 323 43	\$67 136 937 81	\$71 645 275 52	\$74 866 259 94	\$79 657 889 69

## Liabilities

December 31

Line No.	Item (A)	1930 (B)	1931 (C)	1932 (D)	1933 (E)	1934 (F)	1935 (G)	1936 (H)	1937 (I)	1938 (J)	1939 (K)
1	Capital Stock										
2	Common Capital Stock	\$ 100 000 00	\$ 980 000 00	\$ 1 199 000 00	\$ 1 199 000 00	\$ 1 199 000 00	\$ 1 199 000 00	\$18 216 300 00	\$18 216 300 00	\$18 216 300 00	\$20 184 175
3	Preferred Capital Stock	—	—	—	—	—	—	11 000 000 00	11 000 000 00	11 000 000 00	11 000 000
4	Total Capital Stock	100 000 00	980 000 00	1 199 000 00	1 199 000 00	1 199 000 00	1 199 000 00	29 216 300 00	29 216 300 00	29 216 300 00	31 184 175
5	Long-Term Debt										
6	Bonds	20 000 000 00	20 000 000 00	20 000 000 00	19 400 000 00	19 400 000 00	18 200 000 00	17 589 000 00	24 000 000 00	23 500 000 00	23 000 000
7	Miscellaneous Long-Term Debt	—	7 920 000 00	9 891 000 00	9 993 500 00	9 981 594 75	9 976 670 24	172 244 41	2 158 848 83	2 062 664 20	41 436
8	Total Long-Term Debt	20 000 000 00	27 920 000 00	29 891 000 00	29 393 500 00	29 381 594 75	28 176 670 24	17 761 244 41	26 158 848 83	25 562 664 20	23 041 436
9	Current and Accrued Liabilities										
10	Notes Payable	4 012 000 00	—	—	—	—	—	400 000 00	2 625 000 00	—	—
11	Accounts Payable	2 394 496 69	168 669 71	70 058 14	91 691 52	91 168 32	101 847 05	579 220 46	309 825 00	174 172 16	523 121
12	Dividends Declared	—	—	—	—	—	—	—	165 000 00	165 000 00	165 000
13	Matured Long-Term Debt	—	—	—	—	—	—	—	2 110 00	1 582 50	1 582
14	Matured Interest	—	—	—	—	—	—	—	—	—	—
15	Customers' Deposits	6 839 00	2 050 00	2 262 00	2 198 00	593 460 00	1 186 920 00	540 00	2 352 50	2 290 00	890
16	Taxes Accrued	19 359 69	219 628 43	179 091 53	167 745 72	1 990 00	1 943 00	2 276 00	2 370 00	2 840 00	3 415
17	Interest Accrued	303 614 56	457 379 32	496 472 90	487 264 41	159 487 83	160 533 10	445 175 74	736 680 20	1 036 992 32	1 105 545
18	Other Current and Accrued	—	—	—	—	—	—	—	—	—	—
19	Liabilities	1 860 80	1 053 53	1 763 81	1 954 41	4 108 80	3 164 49	8 156 11	5 909 35	3 117 66	3 085
20	Total Current and Accrued										
21	Liabilities	6 729 170 74	848 780 99	749 648 38	750 854 06	1 337 454 05	1 923 630 49	1 699 245 51	4 165 415 88	1 701 689 11	12 109 306
22	Deferred Credits										
23	Customers' Advances for										
24	Construction				57 00	1 135 00	1 075 00	1 195 00	1 553 00	5 964 58	8 241
25	Other Deferred Credits	19 767 24	17 104 10	51 241 12	32 325 25	19 528 26	20 796 67	70 310 96	108 461 94	27 830 62	63 874
26	Total Deferred Credits	19 767 24	17 104 10	51 241 12	32 382 25	20 663 26	21 871 67	71 505 96	110 014 94	33 795 20	72 115
27	Reserves										
28	Reserve for Depreciation of										
29	Gas Plant	53 097 66	190 318 12	543 336 41	1 066 349 96	1 648 572 85	2 184 909 83	2 746 714 26	3 731 763 48	5 272 697 52	6 981 592
30	Reserve for Amortization and										
31	Depletion of Producing Natural										
32	Gas Land and Land Rights	—	—	9 407 08	23 378 95	43 020 03	67 827 41	108 106 52	160 634 78	211 533 71	277 251
33	Reserve for Abandoned Leases	—	19 100 00	52 423 04	79 524 32	133 286 98	184 717 93	150 789 04	212 557 63	252 196 20	339 434
34	Reserve for Uncollectible Accounts	3 946 05	2 907 60	6 096 44	7 245 27	12 220 09	14 459 60	13 909 80	15 405 64	21 367 93	29 523
35	Injuries and Damages Reserve	—	3 300 00	8 764 18	19 564 18	30 364 18	41 164 18	51 964 18	60 664 18	75 064 18	88 914
36	Other Reserves	36 002 66	36 002 66	36 002 66	36 002 66	—	—	—	96 800 94	424 800 94	624 800
37	Total Reserves	93 046 37	249 628 38	656 029 81	1 232 065 34	1 867 464 13	2 493 078 95	3 071 483 80	4 277 826 65	6 257 660 54	8 341 517
38	Contributions in Aid of Construction				1 040 32	1 040 32	1 040 32	29 100 32	29 100 32	29 100 32	36 296
39	Surplus										
40	Capital Surplus	29 643 581 17	29 652 338 25	19 294 624 55	19 294 624 55	19 285 867 47	15 582 941 56	46 364 54	46 364 54	46 364 54	—
41	Earned Surplus	72 798 64	395 424 81	1 105 754 84	2 492 577 54	3 354 772 75	3 797 089 98	1 672 455 17	3 716 452 27	4 289 363 90	6 860 427 7
42	Total Surplus	29 716 379 81	30 047 763 06	18 188 869 71	16 802 047 01	15 931 094 72	14 785 851 58	1 718 819 71	3 762 816 81	4 335 728 44	6 860 427 7
43	Total Liabilities and Other										
44	Credits	\$56 658 364 16	\$60 063 276 53	\$50 735 789 02	\$49 440 888 98	\$49 738 311 23	\$48 601 143 25	\$53 567 699 71	\$67 720 323 43	\$67 136 937 81	\$71 645 275 5
45	*Denotes red figures										

Reference is made to the appended notes which are an integral part of the above balance sheet.



## The Company and Subsidiary Companies

## Liabilities

December 31

1935 (G)	1936 (H)	1937 (I)	1938 (J)	1939 (K)	1940 (L)	June 30, 1941 (M)
199 000 00	\$18 216 300 00	\$18 216 300 00	\$18 216 300 00	\$20 184 175 00	\$20 184 175 00	\$20 184 175 00
—	11 000 000 00	11 000 000 00	11 000 000 00	11 000 000 00	11 000 000 00	11 000 000 00
199 000 00	29 216 300 00	29 216 300 00	29 216 300 00	31 184 175 00	31 184 175 00	31 184 175 00
200 000 00	17 589 000 00	24 000 000 00	23 500 000 00	23 000 000 00	22 500 000 00	18 250 000 00
976 670 24	172 244 41	2 158 848 83	2 062 664 20	41 436 10	30 149 00	5 017 543 80
176 670 24	17 761 244 41	26 158 848 83	25 562 664 20	23 041 436 10	22 530 149 00	23 267 543 80
—	400 000 00	2 625 000 00	—	—	—	—
101 847 05	579 220 46	309 825 00	174 172 16	523 121 52	363 523 48	226 249 25
—	—	165 000 00	165 000 00	165 000 00	165 000 00	165 000 00
—	—	2 110 00	1 582 50	1 582 50	—	1 482 524 23
186 920 00	540 00	2 352 50	2 290 00	890 00	2 420 00	5 875 80
1 943 00	2 276 00	2 370 00	2 840 00	3 415 00	3 885 00	—
160 533 10	445 175 74	736 680 20	1 036 992 32	1 105 545 25	2 333 878 95	3 176 774 41(1)
469 222 85	263 877 20	316 168 83	315 694 47	306 666 68	300 000 00	90 104 18
3 164 49	8 156 11	5 909 35	3 117 66	3 085 58	3 199 01	2 584 66
923 630 49	1 699 245 51	4 165 415 88	1 701 689 11	2 109 306 53	3 171 906 39	5 149 111 73
1 075 00	1 195 00	1 553 00	5 964 58	8 241 29	9 339 48	—
20 796 67	70 310 96	108 461 94	27 830 62	63 874 60	44 351 74	43 333 69
21 871 67	71 505 96	110 014 94	33 795 20	72 115 89	53 691 22	43 333 69
184 909 83	2 746 714 26	3 731 763 48	5 272 697 52	6 981 592 47	8 478 956 45	9 345 403 01
67 827 41	108 106 52	160 634 78	211 533 71	277 251 34	356 987 61	403 389 43
184 717 93	150 782 04	212 557 63	252 196 26	339 434 61	353 557 18	386 721 48
14 459 60	13 909 80	15 405 64	21 367 93	29 523 89	40 088 66	44 819 88
41 164 18	51 964 18	60 664 18	75 064 18	88 914 18	107 408 37	93 123 74
—	—	96 800 94	424 800 94	624 800 94	624 800 94	624 800 94
2 493 078 95	3 071 483 80	4 277 826 65	6 257 660 54	8 341 517 43	9 961 799 21	10 898 258 48
1 040 32	29 100 32	29 100 32	29 100 32	36 296 83	41 571 91	41 346 91
582 941 56	46 364 54	46 364 54	46 364 54	—	—	—
797 089 98	1 672 455 17	3 716 452 27	4 289 363 90	6 860 427 74	7 922 967 21	9 074 120 08(2)
1 785 851 58	1 718 819 71	3 762 816 81	4 335 728 44	6 860 427 74	7 922 967 21	9 074 120 08
601 143 25	\$53 567 699 71	\$67 720 323 43	\$67 136 937 81	\$71 645 275 52	\$74 866 259 94	\$79 657 889 69

led notes which are an integral part of the above Balance sheet.



[fol. 13209]

Exhibit 48

Page 3

Witness Watkins

## Panhandle Eastern Pipe Line Company And Subsidiary Companies

## Notes To Balance Sheets

Line  
No.

- |    |     |  |
|----|-----|--|
| 1  | (1) | Including Federal income and Excess    |
| 2  |     | Profits Taxes computed without regard  |
| 3  |     | to special deductions resulting from   |
| 4  |     | the refinancing consummated during     |
| 5  |     | February, 1941, and without making     |
| 6  |     | provision for possible increase in     |
| 7  |     | rates or otherwise during 1941.        |
|    |     |  |
| 8  | (2) | Surplus is restricted in the amount    |
| 9  |     | of \$4,113,952.58 by Mortgage and Deed |
| 10 |     | of Trust dated November 1, 1940, as to |
| 11 |     | payment of dividends.                  |
-

## Panhandle Eastern Pipe Line Company And Subsidiary Companies

Income Statement — Per Books  
Period From April 1, 1932 To December 31, 1941

Year Ended December 31

Line No.	Item (A)	1932 April 1 to December 31 (B)	1933 (C)	1934 (D)	1935 (E)	1936 (F)	1937 (G)	1938 (H)	1939 (I)	1940 (J)
1	Income									
2	Operating Revenues									
3	Gas	\$1 346 228 99	\$2 416 397 62	\$2 844 934 63	\$3 371 882 80	\$5 815 682 31	\$9 212 821 95	\$9 540 967 85	\$11 461 388 31	\$13 167 241 73
4	Gasoline	—	—	—	—	46 318 74	429 051 48	353 128 71	513 940 99	355 722 01
5	Pipe Line Rentals	67 018 27	154 911 25	189 638 39	221 276 31	102 872 18	—	—	—	—
6	Miscellaneous	14 246 32	14 087 92	13 944 83	18 705 92	72 994 76	21 635 99	13 032 46	21 439 93	12 489 05
7	Total Operating Revenues	1 427 493 58	2 585 396 79	3 048 517 85	3 611 865 03	6 037 867 99	9 662 909 42	9 907 129 02	11 996 769 23	13 535 452 79
8	Operating Revenue Deductions									
9	Operation and Maintenance Expenses	787 282 03	999 104 75	1 009 569 44	1 064 408 69	1 503 536 46	2 193 924 05	2 386 502 03	2 698 910 34	3 000 764 52
10	Depreciation (Including Amortization)	321 196 63	624 052 98	629 017 13	630 539 44	672 400 19	1 217 882 94	1 577 158 67	1 711 382 62	1 720 744 97
11	Amortization and Depletion of Producing									
12	Natural Gas Land and Land Rights	6 908 30	13 971 87	19 641 08	24 807 38	40 279 11	52 528 26	50 898 93	65 747 63	79 736 27
13	Abandoned Leases	73 683 14	85 580 00	82 092 00	79 560 90	75 010 26	113 976 77	100 549 56	93 599 61	80 408 63
14	Amortization of Other Limited Term									
15	Gas Investments	26 761 93	33 289 63	33 289 68	33 289 68	296 906 58	320 565 16	326 892 74	329 300 14	329 110 13
16	Taxes									
17	State, Local and Miscellaneous									
18	Federal	216 130 27	262 375 23	270 204 00	284 598 03	360 293 90	412 961 36	577 888 16	675 477 83	612 871 48
19	Federal Income	—	—	—	—	230 000 00	492 000 00	513 426 21	820 286 12	1 436 598 47
20	Federal Excess Profits	—	—	—	—	—	—	—	—	561 000 00
21	Total Operating Revenue Deductions	1 431 961 70	2 018 374 51	2 044 413 35	2 117 204 12	3 178 426 50	4 803 837 64	5 533 316 40	6 394 674 29	7 821 234 47
22	Net Operating Revenue	4 468 12*	567 022 28	1 004 104 52	1 494 660 91	2 859 441 49	4 859 071 78	4 373 812 62	5 602 094 94	5 714 218 32
23	Other Income									
24	Interest Revenues	15 008 44	8 234 75	4 055 81	3 611 75	7 605 71	17 737 82	13 172 56	13 884 90	13 427 53
25	Miscellaneous Nonoperating Revenues	6 375 00	—	—	—	—	—	—	—	—
26	Total Other Income	21 383 44	8 234 75	4 055 81	3 611 75	7 605 71	17 737 82	13 172 56	13 884 90	13 427 53
27	Gross Income	16 915 32	575 257 03	1 008 160 33	1 497 672 66	2 867 047 20	4 876 809 60	4 386 985 18	5 615 979 84	5 727 645 85
28	Income Deductions									
29	Interest on Long-Term Debt	1 334 607 00	1 770 760 00	1 760 156 18	1 725 397 26	1 137 387 05	987 030 42	944 233 34	923 333 32	903 333 32
30	Amortization of Debt Discount and									
31	Expense	78 653 23	102 702 87	149 741 62	98 250 56	93 679 98	285 107 13	319 676 56	314 852 87	310 029 24
32	Other Interest Charges	682 35	1 091 79	267 27	78 87	1 934 49	34 383 06	65 129 11	14 394 31	2 787 11
33	Interest Charged to Construction	5 332 60*	—	—	—	77 139 75*	189 238 82*	1 277 51*	—	36 827 80*
34	Total Income Deductions	1 408 669 98	1 874 554 66	1 880 167 09	1 823 726 69	1 155 861 77	1 117 281 79	1 327 761 44	1 252 580 50	1 179 321 87
35	Net Income	\$1 391 694 66*	\$1 299 297 63*	\$ 872 006 76*	\$ 326 054 03*	\$1 711 185 43	\$3 759 527 81	\$3 059 223 74	\$ 4 363 399 34	\$ 4 548 323 98

\*Denotes red figures.

Note: (1) 6 months actual, 6 months estimated.

(2) Computed without regard to special deductions result

financing consummated during February, 1941, but adjusted for increases in rates and other changes contemplated in the 1941 Revenue A

y Companies

941

r 31

	1938 (H)	1939 (I)	1940 (J)	Cumulative Total (K)	Average 1932-1940 (8-3/4 Yr.) (L)	1941 (1) January 1 to December 31, (M)
95	\$9 540 967 85	\$11 461 388 31	\$13 167 241 73	\$59 177 546 19	\$6 763 148 13	\$14 786 022 00
48	353 128 71	513 940 99	355 722 01	1 698 161 93	194 075 65	614 556 00
				735 716 40	84 081 87	—
99	13 032 46	21 439 93	12 489 05	201 977 18	23 083 11	8 809 00
42	9 907 129 02	11 996 799 23	13 535 452 79	61 813 401 70	7 064 388 76	15 409 387 00
05	2 386 502 03	2 698 910 34	3 000 764 52	15 644 002 31	1 787 885 98	3 342 501 00
04	1 577 158 67	1 711 382 62	1 720 744 97	9 104 374 07	1 040 499 89	1 912 955 00
26	50 898 93	65 717 63	79 736 27	354 488 83	40 513 01	84 301 00
77	100 549 56	93 599 61	80 408 63	785 060 87	89 721 24	80 915 00
15	326 892 84	329 300 14	329 110 13	1 720 405 82	197 646 38	336 486 00
36	577 888 16	675 477 83	612 871 48	3 672 800 26	419 748 60	731 903 00
00	513 426 21	820 286 12	1 436 593 47	3 492 310 80	399 121 23	1 875 000 00(2)
		—	561 000 00	561 000 00	64 114 29	1 800 000 00(2)
34	5 533 316 40	6 394 674 29	7 821 234 47	35 343 442 96	4 039 250 62	10 164 061 00
78	4 373 812 62	5 692 094 94	5 714 218 32	26 469 958 74	3 025 138 14	5 245 326 00
82	13 172 56	13 884 90	13 427 53	96 139 27	10 987 34	13 833 00
				6 375 00	728 57	—
82	13 172 56	13 884 90	13 427 53	102 514 27	11 715 91	13 833 00
30	4 386 985 18	5 615 979 84	5 727 645 85	26 572 473 01	3 036 854 05	5 259 159 00
12	944 233 34	923 333 32	903 333 32	11 486 239 89	1 312 713 13	572 224 00
13	319 676 50	314 852 87	310 029 24	1 722 694 00	196 879 31	299 313 00
06	65 129 11	14 394 31	2 787 11	120 748 38	13 799 82	3 917 00
32*	1 277 51*	—	36 827 80*	399 816 48*	35 407 60*	—
79	1 327 761 44	1 252 580 50	1 179 321 87	13 019 806 79	1 487 984 66	875 454 00
81	\$3 059 223 74	\$ 4 363 399 34	\$ 4 548 323 98	\$13 552 607 22	\$1 548 869 39	\$ 4 383 705 00

## Panhandle Eastern Pipe Line Company And Subsidiary Companies

Net Income Adjusted For Depreciation  
(Including Amortization) Computed At 3%  
For Period From April 1, 1932 To December 31, 1941

[illegible]

## Schedule 2

Witness Watkins

Subsidiary Companies.

tion  
At 3%  
per 31, 1941

31						
1937 (G)	1938 (H)	1939 (I)	1940 (J)	Cumulative Total (K)	Average 1932-1940 (8 3/4 Yrs.) (L)	1941 January 1 to December 31 (M)
9 527 81	\$3 059 223 74	\$4 363 399 34	\$4 548 323 98	\$13 552 607 22	\$1 548 869 39	\$4 383 705 00
7 882 04	1 577 158 67	1 711 382 62	1 720 744 97	9 104 374 07	1 040 499 89	1 912 955 00
7 409 85	4 636 382 41	6 074 781 96	6 269 068 95	22 656 981 29	2 589 369 28	6 296 660 00
4 935 50	1 698 519 63	1 715 579 73	1 800 529 31	12 586 281 13	1 438 432 13	1 886 308 24
2 474 35	\$2 937 862 78	\$4 359 202 23	\$4 468 539 64	\$10 070 700 16	\$1 150 937 15	\$4 410 351 76



## Panhandle Eastern Pipe Line Company And Subsidiary Companies

## Earned Surplus — Per Books

Period From Commencement Of Operations To June 30, 1941

Line No.	Item (A)	Year Ended December 31								
		1930 September 1 to December 31 (B)	1931 (C)	1932 (D)	1933 (E)	1934 (F)	1935 (G)	1936 (H)	1937 (I)	1938 (J)
1	Earned surplus, beginning of year	\$ —	\$ 72 798 64	\$ 395 424 81	\$1 105 754 84*	\$2 492 577 54*	\$3 354 772 75*	\$3 797 089 98*	\$1 672 455 17	\$3 716
2	Credits									
3	Credit balance transferred from									
4	income account	72 798 64	342 321 35					1 711 185 43	3 759 527 81	3 059
5	Miscellaneous credits to surplus:									
6	Transfer of unused balance of reserve for									
7	income taxes previously provided for by									
8	a subsidiary company					36 002 66				
9	Nominal value assigned to investment in									
10	subsidiary company					1 00				
11	Adjusted earned deficit at December 31,									
12	1935 combined with capital surplus:									
13	Adjusted earned surplus deficit of									
14	Panhandle Eastern Pipe Line Com-									
15	pany at December 31, 1935 combined							1 247 365 50		
16	with capital surplus as authorized by									
17	Board of Directors									
18	Provision for reserve for loss on in-									
19	vestments in subsidiary companies									
20	as of December 31, 1935 combined									
21	with capital surplus as authorized by									
22	Board of Directors							2 232 009 04		
23	Surplus arising from readjustment of									
24	funded debt and cancellation of ac-									
25	crued interest thereon to February 6,									
26	1936 (\$274,091.50 applicable to period									
27	prior to December 31, 1935)							331 789 00		
28	Discount on reacquired bonds							4 064 37		
29	Deficit of a subsidiary company (dissolved)									
30	transferred to Capital Surplus						39 891 36			
31	Miscellaneous direct credits			7 679 83				2 859 90		
32	Total Credits	\$ 72 798 64	\$ 342 321 35	\$ 7 679 83	\$ —	\$ 36 003 66	\$ 39 891 36	\$5 529 273 24	\$3 759 527 81	\$3 06

\* Denotes red figure.

Companies

, 1941

December 31

1941  
January 1  
to June 30  
(M)

1936 (H)	1937 (I)	1938 (J)	1939 (K)	1940 (L)	
\$3 797 089 98*	\$1 672 455 17	\$3 716 452 27	\$4 289 363 90	\$6 860 427 74	\$7 922 967 21

1 711 185 43	3 759 527 81	3 059 223 74	4 363 399 34	4 548 323 98	2 653 937 50
--------------	--------------	--------------	--------------	--------------	--------------

1 247 365 50

2 232 009 04

331 789 00  
4 064 37

7 806 25

2 859 90

386 61

\$5 529 273 24	\$3 759 527 81	\$3 067 416 60	\$4 363 399 34	\$4 548 323 98	\$2 653 937 50
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Exhibit 50  
Panhandle Eastern Pipe Line Company And Subsidiary Companies

Earned Surplus — Per Books  
Period From Commencement Of Operations To June 30, 1941

Line No.	Item (A)	1930 September 1 to December 31 (B)	Year Ended December 31							
			1931 (C)	1932 (D)	1933 (E)	1934 (F)	1935 (G)	1936 (H)	1937 (I)	
1	Debits									
2	Debit balance transferred from income account	\$ —	\$ —	\$1 341 579 39	\$1 299 297 63	\$ 872 006 76	\$ 326 054 03	\$ —	\$ —	\$
3	Dividend appropriations — Preferred Stock:									
4	Ordinary								1 320 000 00	66
5	Participating									18
6	Dividend appropriations — Common Stock:									
7	Ordinary								364 326 00	1 09
8	Participating									54
9	Miscellaneous debits to surplus:									
10	Reduction of interest capitalized by amount									
11	of interest earned during 1930.		18 334 42							
12	Reduction of investment in subsidiary									
13	company			5 904 41						
14	Capitalization of net income from operations									
15	during construction period for certain									
16	subsidiary companies			53 551 88						
17	Provision for additional depreciation and									
18	amortization for period from April 1, 1931									
19	to December 31, 1931.			107 823 80						
20	Earned surplus balance of a subsidiary									
21	company transferred to retirement and de-									
22	pletion reserve				2 818 71					
23	Unamortized debt discount and expense									
24	applicable to bonds retired				54 706 36		96 154 56	45 780 28		
25	Premium on bonds retired				30 000 00		60 000 00	13 947 81		
26	Loss sustained on investment in dissolution or									
27	disposal of subsidiary companies					23 488 80			30 829 71	
28	Provision for uncollectible account due									
29	from receivers of Missouri-Kansas Pipe									
30	Line Company					2 703 31				
31	Miscellaneous direct debits		1 360 76						375 00	11
32	Total Debits	\$ —	\$ 19 695 18	\$1 508 859 48	\$1 386 822 76	\$ 898 198 87	\$ 482 208 59	\$ 59 728 09	\$1 715 530 71	\$2 494
33	Earned Surplus, End Of Year	\$ 72 798 64	\$ 395 424 81	\$1 105 754 84*	\$2 492 577 54*	\$3 354 772 75*	\$3 797 089 98*	\$1 672 455 17	\$3 716 452 27	\$4 281

34 \* Denotes red figure

ary Companies

me 30, 1941

ded December 31

Page 2  
Witness Watkins

	1936 (H)	1937 (I)	1938 (J)	1939 (K)	1940 (L)	1941 January 1 to June 30 (M)
--	-------------	-------------	-------------	-------------	-------------	--

54 03	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —
		1 320 000 00	660 000 00	660 000 00	660 000 00	330 000 00
			182 163 00		403 683 51	
		364 326 00	1 092 978 00	1 132 335 50	1 211 050 50	1 146 461 14
			546 489 00		1 211 050 50	

54 56 45 780 28  
00 00 13 947 81

30 829 71

26 323 49

375 00

12 874 97

08 59	\$ 59 728 09	\$1 715 530 71	\$2 494 504 97	\$1 792 335 50	\$3 485 784 51	\$1 502 784 63
09 98*	\$1 672 455 17	\$3 716 452 27	\$4 289 363 90	\$6 860 427 74	\$7 922 967 21	\$9 074 120 08



## Panhandle Eastern Pipe Line Company And Subsidiary Companies

Capital Surplus Per Books  
Period From September 1, 1930 To June 30, 1941

Line No.	Item (A)	Year Ended December 31							
		1930 September 1 to December 31 (B)	1931 (C)	1932 (D)	1933 (E)	1934 (F)	1935 (G)	1936 (H)	1937 (I)
1	Balance beginning of year	\$ —	\$29 643 581 17	\$29 652 338 25	\$19 294 624 55	\$19 294 624 55	\$19 285 867 47	\$18 582 941 56	\$46 364 54
2	Credits								
3	Capital surplus arising from assets donated								
4	and indebtedness cancelled by Missouri-Kansas								
5	Pipe Line Company as of August 31, 1930.	19 335 867 47							
6	Capital surplus arising from sale of 5,100								
7	shares of no par value common stock donated								
8	to the Treasury. \$50 000.00								
9	Less — write-off value assigned to								
10	gas lease 1 000 00	49 000 00							
11	Capital surplus arising from revaluation								
12	of Gas Sales and Purchase Contracts, re-								
13	versed March 31, 1932.	10 357 713 70							
14	Excess value per books over cost on acquired								
15	capital investment in subsidiary company, re-								
16	versed in year 1934.		8 757 08						
17	Total Credits	29 742 581 17	8 757 08						
18	Debits								
19	Additional value assigned to no par value								
20	common stock in accordance with a resolution								
21	of the Board of Directors on October 28, 1930	99 000 00							
22	Reversal of capital surplus arising from re-								
23	valuation of Gas Sales and Purchase Contracts			10 357 713 70					
24	Reversal of excess value per books over cost on								
25	acquired capital investment in subsidiary company					8 757 08			
26	Loss sustained on the liquidation of investment								
27	in dissolution of subsidiary companies.						702 925 91		
28	Adjusted earned deficit at December 31, 1935								
29	combined with capital surplus:								
30	Adjusted earned surplus deficit of Panhandle								
31	Eastern Pipe Line Company at December								
32	31, 1935 combined with capital surplus as								
33	authorized by Board of Directors							1 247 365 50	
34	Provision for reserve for loss on investments								
35	in subsidiary companies as of December 31,								
36	1935 as authorized by Board of Directors.							2 232 009 04	
37	Claims against receivers of Missouri-Kansas								
38	Pipe Line Company written-off.							39 902 48	
39	Capital surplus assigned to stock dividend paid								
40	by the issuance of 646,354 shares of common stock							15 017 300 00	
41	Capital surplus transferred to reserve for depre-								
42	ciation, as authorized by the Board of Directors								
43	Total Debits	99 000 00		10 257 713 70		3 757 08	702 925 91	18 536 577 02	
44	Balance End Of Year	\$29 643 581 17	\$29 652 338 25	\$19 294 624 55	\$19 294 624 55	\$19 285 867 47	\$18 582 941 56	\$ 46 364 54	\$46 364 54



## Page 1

**Witness Watkins**

41

ed December 31

1941  
January 1  
to June 30  
(M)

[illegible]

## Gas Plant

## Panhandle Eastern Pipe Line Company and Subsidiary Companies

December 31

Line No.	Item (A)	1930 (B)	1931 (C)	1932 (D)	1933 (E)	1934 (F)	1935 (G)	1936 (H)	1937 (I)
1	Intangible Plant								
2	Organization	\$ 24 746 20	\$ 110 647 63	\$ 115 834 83	\$ 115 834 83	\$ 115 986 15	\$ 116 707 57	\$ 116 820 90	\$ 116 291 98
3	Franchises and consents	2 191 34	58 934 48	117 385 32					
4	Miscellaneous intangible plant	618 80	—	19 671 95	98 005 14	98 005 11	97 991 71	97 991 71	97 991 71
5	Totals Intangible Plant	27 556 34	169 582 11	213 548 20	213 839 94	213 991 26	214 699 28	214 812 61	214 283 69
6	Production Plant								
7	(a) Natural Gas Production								
8	Plant								
9	Natural Gas Producing								
10	leaseholds — drilled	453 354 93	420 930 76	394 111 17	376 594 80	387 238 81	369 633 0*	472 776 10	749 406 55
11	Natural gas producing								
12	leaseholds — not drilled	1 203 901 45	1 499 090 43	1 455 299 39	1 387 510 67	1 348 237 06	1 293 219 55	1 191 969 57	1 049 128 94
13	Other land and land rights	—	299 00	299 00	299 00	299 00	299 00	299 00	299 00
14	Other production system								
15	structures	—	79 015 90	38 094 06	38 588 63	38 588 63	38 887 13	38 899 88	44 262 39
16	Producing gas wells —								
17	well construction	345 227 18	118 060 68	969 926 43	948 284 81	948 704 40	917 717 40	1 038 775 03	1 553 917 31
18	Producing gas wells —								
19	well equipment	101 158 57	334 480 02	311 703 66	309 874 19	302 299 28	309 541 68	345 723 21	454 395 16
20	Drilling and cleaning								
21	equipment	250 00	53 557 70	54 701 88	48 801 31	48 780 53	42 512 52	39 234 85	52 932 74
22	Purification and residual								
23	refining equipment	—	—	—	—	—	—	2 383 04	699 814 73
24	Other production equipment	—	—	—	—	—	—	—	—
25	Totals Natural Gas Production								
26	Plant	2 103 892 13	3 505 434 49	3 224 135 59	3 109 953 41	3 074 147 71	2 971 810 36	3 130 160 68	4 514 156 82
27	(b) Manufactured Gas								
28	Production Plant	—	36 112 02	30 112 02	30 112 02	30 112 02	30 112 02	30 112 02	—
29	Totals Production Plant	2 103 892 13	3 535 546 51	3 254 247 61	3 140 065 43	3 104 259 73	3 001 922 38	3 160 272 70	4 514 156 82
30	Transmission Plant								
31	Land	1 940 75	41 372 32	42 021 68	42 121 68	42 212 31	42 212 31	46 432 82	72 335 42
32	Land rights	16 341 27	819 942 01	900 965 73	900 405 76	915 476 41	917 541 62	930 838 27	1 071 122 10
33	Pumping station structures	—	208 399 61	218 459 25	218 459 25	218 459 25	219 424 84	719 516 36	1 059 117 40
34	Measuring and regulating								
35	station structures	9 793 95	22 404 82	30 099 51	35 298 05	35 945 19	33 685 50	35 747 52	55 746 14
36	Other transmission structures	—	114 333 08	179 121 24	180 808 73	181 339 30	181 929 64	187 328 11	313 548 07
37	Mains	2 759 107 93	31 231 403 05	31 551 884 52	31 547 742 59	31 700 129 66	31 651 527 54	31 936 602 82	41 362 290 02
38	Pumping station equipment	270 534 33	1 995 864 84	2 035 172 59	2 028 831 40	2 029 554 36	2 030 212 87	1 968 614 55	7 970 551 89
39	Measuring and regulating								
40	station equipment	52 681 48	236 965 68	352 739 89	346 690 57	358 362 14	362 097 17	382 314 16	445 560 01
41	Other transmission equipment	—	—	842 46	842 46	2 454 36	3 096 35	2 788 00	8 327 95
42	Totals Transmission Plant	\$ 3 110 399 71	\$34 670 685 41	\$35 311 306 87	\$35 301 200 49	\$35 483 932 98	\$35 441 727 84	\$39 210 182 70	\$52 358 599 00

Companies

Member 31

	1936 (H)	1937 (I)	1938 (J)	1939 (K)	1940 (L)	June 30, 1941 (M)
7	\$ 116 820 90	\$ 116 291 98	\$ 116 291 98	\$ 116 291 98	\$ 116 291 98	\$ 115 172 86
	97 991 71	97 991 71	97 991 71	97 991 71	97 991 71	64 427 72
8	214 812 61	214 283 69	214 283 69	214 283 69	214 283 69	179 600 58
	472 776 10	749 406 55	834 269 49	949 880 70	996 613 19	1 010 996 84
	1 191 969 57 299 00	1 049 128 94 299 00	955 795 59 299 00	865 472 36 299 00	759 239 20 299 00	734 210 55 299 00
	38 899 88	44 262 39	46 166 15	46 768 78	46 426 96	46 808 76
	1 038 775 03	1 553 917 31	1 756 980 43	1 937 811 04	2 023 739 62	2 027 024 28
	345 723 21	454 395 16	515 138 02	565 682 80	592 983 63	593 266 66
	39 334 85	52 932 74	29 140 00	19 971 18	20 762 34	20 676 46
	2 383 04	609 814 73	624 609 15	629 652 39	658 355 27 399 08	699 866 27 399 08
	3 130 160 68	4 514 156 82	4 762 397 83	5 015 538 25	5 098 817 69	5 133 547 90
	30 112 02					
	3 160 272 70	4 514 156 82	4 762 397 83	5 015 538 25	5 098 817 69	5 133 547 90
	46 432 82	72 335 42	114 133 36	116 568 95	117 014 44	118 659 15
	930 838 27	1 071 122 10	1 109 602 67	1 114 333 56	1 179 121 65	1 181 705 10
	719 516 36	1 059 117 40	1 070 378 29	1 986 920 88	1 181 411 39	1 314 753 79
	35 747 52	55 746 14	61 089 74	65 890 22	69 511 69	71 562 12
	187 328 11	313 548 07	334 519 47	355 915 32	359 500 13	409 186 09
31	936 602 82	41 362 290 02	41 671 595 35	41 774 443 45	46 534 673 30	46 570 319 17
4	968 614 53	7 970 551 89	7 900 306 61	7 890 354 95	7 973 458 74	8 436 264 23
	382 314 16	445 560 01	487 393 11	513 370 73	528 960 46	532 402 08
	2 788 09	8 327 95	23 766 17	42 562 38	51 893 85	48 950 36
	\$39 210 182 70	\$52 358 599 00	\$52 772 784 77	\$52 960 360 44	\$57 995 545 65	\$58 683 802 09

## Gas Plant

[fol. 13216]

## Panhandle Eastern Pipe Line Company And Subsidiary Companies

December 31

Line No.	Item (A)	1930 (B)	1931 (C)	1932 (D)	1933 (E)	1934 (F)	1935 (G)	1936 (H)	1937 (I)	1938 (J)	
1	Distribution Plant										
2	Land and land rights	\$ —	\$ 588 13	\$ 665 53	\$ 677 03	\$ 700 63	\$ 700 63	\$ 700 63	\$ 647 93	\$ 674 18	\$
3	Structures and improvements	1 365 79	1 866 82	1 991 91	1 991 91	1 991 91	1 999 11	2 345 19	2 345 19	1 999 11	
4	Mains	37 944 50	280 539 74	315 206 41	318 490 95	323 069 04	324 670 23	325 894 89	288 802 85	296 897 70	30
5	Pumping and regulating equipment	2 075 04	6 843 98	7 763 73	7 822 37	7 898 63	7 544 52	7 544 52	7 354 55	7 556 60	
7	Services	5 351 65	27 108 43	33 137 49	35 686 47	39 446 66	41 398 50	43 932 23	42 682 97	44 653 58	
8	Meters	9 608 89	40 798 15	35 422 33	36 225 76	39 786 29	43 393 85	45 860 84	46 817 97	49 583 62	
9	Meter installations	1 444 00	2 234 55	3 186 70	3 512 27	3 831 47	4 094 96	4 330 42	4 492 85	4 710 56	
10	House regulators and installations	1 533 10	10 984 13	8 966 50	9 639 58	10 234 56	11 000 45	12 211 98	12 927 25	14 016 80	
12	Other distribution equipment	476 36	476 36	476 36	476 36	476 36	476 36	476 36	476 36	476 36	
13	Totals Distribution Plant	59 799 33	371 440 29	406 815 96	414 552 70	427 435 55	435 278 61	443 297 06	406 547 92	420 568 51	
14	General Plant										
15	General office structures	5 141 26	9 284 51	9 284 51	9 292 64	9 292 64	8 901 86	3 797 17	—	—	
16	Office furniture and equipment	42 508 91	57 701 46	58 091 32	56 006 70	52 972 79	52 561 23	57 478 18	65 681 96	67 375 68	
17	Transportation equipment	68 195 83	103 422 68	87 072 04	84 203 41	82 896 12	78 278 85	83 450 23	96 527 78	97 172 16	10
18	Shop equipment	—	530 66	56 86	56 86	56 86	56 86	56 86	—	—	
19	Laboratory equipment	2 608 48	4 512 49	7 254 72	7 104 72	7 104 72	7 081 92	7 552 48	6 869 88	6 869 88	
20	Tools and work equipment	4 021 32	26 647 13	28 970 62	18 444 93	17 868 28	17 824 02	18 126 58	19 773 44	21 293 40	
21	Communication equipment	—	381 802 69	366 804 16	367 205 26	367 205 26	364 843 57	368 723 10	369 634 26	368 757 10	36
22	Miscellaneous equipment	—	101 86	101 86	101 86	101 86	101 86	101 86	101 86	101 86	
23	Totals General Plant	122 475 80	583 803 48	557 636 09	542 416 38	537 498 53	529 650 17	539 286 46	558 589 18	561 570 08	57
24	Undistributed Construction Expenditures										
26	Engineering and superintendence during construction	—	62 825 67	125 60	125 60	125 60	125 60	125 60	—	—	
28	Law expenditures during construction	—	84 749 64	104 868 19	104 868 19	104 868 19	104 868 19	104 868 19	—	—	
29	Interest during construction	7 617 38*	1 926 972 76	2 381 718 19	2 381 718 19	2 386 153 55	2 386 153 55	2 387 453 97	—	—	
31	Taxes during construction	—	281 409 98	291 854 91	290 100 93	290 100 93	290 100 93	290 100 93	—	—	
32	Miscellaneous construction expenditures	5 653 33*	101 862 59	16 779 32	16 779 32	16 943 63	16 943 63	16 943 63	—	—	
34	Totals Undistributed Construction Expenditures	13 270 71*	2 457 820 64	2 795 346 21	2 793 592 23	2 798 191 90	2 798 191 90	2 799 492 32	—	—	
36	Other Undistributed Gas Plant										
37	Undistributed gas plant	2 160 998 51	26 902 93	29 381 97	29 381 97	29 381 97	19 730 34	19 730 34	19 730 34	19 730 34	19
38	Total Gas Plant Classified	7 571 851 11	41 815 781 37	42 568 282 91	42 435 049 14	42 594 691 92	42 441 200 52	46 387 074 19	58 071 906 95	58 751 335 22	59 226
39	Construction work-in progress	23 462 003 56	188 808 94	11 801 69	196 147 59	309 70	156 121 03	503 061 42	2 022 391 84	10 818 15	467
40	Gas sales and purchase contracts	13 398 402 19	13 409 544 31	3 053 391 53	3 053 391 53	3 053 391 53	3 053 391 53	2 930 286 40	2 930 286 40	2 930 286 40	2 930
41	Reserve for amortization of gas sales and purchase contracts	—	—	26 761 93*	58 876 33*	96 990 73*	123 105 13*	295 731 30*	586 057 20*	879 085 80*	1 172
42	Other gas sales and purchase contracts	—	—	—	—	—	—	371 076 00	358 658 20	401 443 07	380
45	Consolidation reduction in investment in subsidiary company	—	—	—	—	32 244 88*	32 244 88*	32 244 88*	—	—	
47	Gas Plant	\$44 432 256 86	\$55 414 134 62	\$45 606 714 20	\$45 625 712 23	\$45 525 157 54	\$45 495 363 07	\$49 863 521 83	\$60 977 186 19	\$61 214 797 04	\$61 838

\* Denotes red figure



1936 (H)	1937 (I)	1938 (J)	1939 (K)	1940 (L)	June 30, 1941 (M)
700 63	\$ 647 93	\$ 674 18	\$ 674 18	\$ 634 44	\$ —
2 345 19	2 345 19	1 999 11	1 999 11	1 999 11	—
325 894 89	288 802 85	256 897 70	305 304 37	315 171 01	—
7 544 52	7 354 55	7 556 60	7 946 87	7 976 42	—
43 932 23	42 682 07	44 653 58	47 448 19	51 003 90	—
45 860 84	46 817 97	49 583 62	53 060 05	56 777 98	—
4 330 42	4 492 85	4 710 56	4 877 65	5 102 59	—
12 211 98	12 927 25	14 016 80	14 872 20	16 113 72	—
476 36	476 36	476 36	476 36	476 36	—
443 297 06	406 547 92	420 568 51	436 658 98	455 255 53	—
3 797 17	—	—	—	—	—
57 478 18	65 681 96	67 375 68	71 564 19	80 018 95	78 082 36
83 450 23	96 527 78	97 172 16	102 939 59	108 097 47	109 226 87
56 86	—	—	—	—	—
7 552 48	6 869 88	6 869 88	6 619 88	6 619 88	6 550 71
18 126 58	19 773 44	21 293 40	29 179 13	32 591 73	40 251 96
368 723 10	369 634 26	368 757 10	369 088 82	369 365 07	371 355 85
101 86	101 86	101 86	101 86	101 86	—
539 286 46	558 589 18	565 570 08	579 493 47	596 794 96	605 467 75
125 60	—	—	—	—	—
104 868 19	—	—	—	—	—
2 387 453 97	—	—	—	—	—
200 100 93	—	—	—	—	—
16 943 63	—	—	—	—	—
2 799 492 32	—	—	—	—	—
19 730 34	19 730 34	19 730 34	19 730 34	19 730 34	19 730 34
16 387 074 19	58 071 906 95	58 751 335 22	59 226 065 17	64 380 427 86	64 622 148 66
503 061 42	2 022 391 84	10 818 15	467 946 74	688 812 12	353 556 82
2 930 286 40	2 930 286 40	2 930 286 40	2 930 286 40	2 930 286 40	2 930 286 40
295 731 30*	586 057 20*	879 085 80*	1 172 114 40*	1 465 143 00*	1 611 657 30*
371 076 00	358 658 20	401 443 07	386 197 00	372 006 38	365 334 99
32 244 88*	—	—	—	—	—
19 863 521 83	\$60 977 186 19	\$61 214 797 04	\$61 838 380 91	\$66 906 389 76	\$66 689 669 57



## Panhandle Eastern Pipe Line Company

Statement Of Dividends Paid On Class A And Class B Preferred Stocks  
From Beginning To September 1, 1941

Line No.	Period to Which Applicable (A)	Date Paid (B)	Amount Paid		
			Ordinary (C)	Participating (D)	Total (E)
1	Class A Preferred Stock—				
2	January 1, 1936 to March 31, 1937	May 3, 1937	\$ 750 000 00	\$ —	\$ 750 000 00
3	Quarter ended June 30, 1937	July 1, 1937	150 000 00	—	150 000 00
4	Quarter ended September 30, 1937	Oct. 1, 1937	150 000 00	—	150 000 00
5	Quarter ended December 31, 1937	Jan. 1, 1938	150 000 00	—	150 000 00
6	Quarter ended March 31, 1938	Apr. 1, 1938	150 000 00	—	150 000 00
7	Quarter ended June 30, 1938	July 1, 1938	150 000 00	—	150 000 00
8	Quarter ended September 30, 1938	Oct. 1, 1938	150 000 00	—	150 000 00
9	Quarter ended December 31, 1938	Jan. 1, 1939	150 000 00	—	150 000 00
10		Dec. 21, 1938	—	182 163 00	182 163 00
11	Quarter ended March 31, 1939	Apr. 1, 1939	150 000 00	—	150 000 00
12	Quarter ended June 30, 1939	July 1, 1939	150 000 00	—	150 000 00
13	Quarter ended September 30, 1939	Oct. 1, 1939	150 000 00	—	150 000 00
14	Quarter ended December 31, 1939	Jan. 1, 1940	150 000 00	—	150 000 00
15	Quarter ended March 31, 1940	Apr. 1, 1940	150 000 00	—	150 000 00
16	Quarter ended June 30, 1940	July 1, 1940	150 000 00	—	150 000 00
17		July 12, 1940	—	134 561 17	134 561 17
18		July 12, 1940	—	134 561 17	134 561 17
19	Quarter ended September 30, 1940	Oct. 1, 1940	150 000 00	—	150 000 00
20		Oct. 28, 1940	—	134 561 17	134 561 17
21	Quarter ended December 31, 1940	Jan. 1, 1941	150 000 00	—	150 000 00
22	Quarter ended March 31, 1941	Apr. 1, 1941	150 000 00	—	150 000 00
23	Quarter ended June 30, 1941	July 1, 1941	150 000 00	—	150 000 00
24	Total dividends paid on Class A Preferred Stock		\$3 300 000 00	\$ 585 846 51	\$3 885 846 51
25	Class B Preferred Stock —				
26	January 1, 1936 to March 31, 1937	May 3, 1937	\$ 75 000 00	\$ —	\$ 75 000 00
27	Quarter ended June 30, 1937	July 1, 1937	15 000 00	—	15 000 00
28	Quarter ended September 30, 1937	Oct. 1, 1937	15 000 00	—	15 000 00
29	Quarter ended December 31, 1937	Jan. 1, 1938	15 000 00	—	15 000 00
30	Quarter ended March 31, 1938	Apr. 1, 1938	15 000 00	—	15 000 00
31	Quarter ended June 30, 1938	July 1, 1938	15 000 00	—	15 000 00
32	Quarter ended September 30, 1938	Oct. 1, 1938	15 000 00	—	15 000 00
33	Quarter ended December 31, 1938	Jan. 1, 1939	15 000 00	—	15 000 00
34	Quarter ended March 31, 1939	Apr. 1, 1939	15 000 00	—	15 000 00
35	Quarter ended June 30, 1939	July 1, 1939	15 000 00	—	15 000 00
36	Quarter ended September 30, 1939	Oct. 1, 1939	15 000 00	—	15 000 00
37	Quarter ended December 31, 1939	Jan. 1, 1940	15 000 00	—	15 000 00
38	Quarter ended March 31, 1940	Apr. 1, 1940	15 000 00	—	15 000 00
39	Quarter ended June 30, 1940	July 1, 1940	15 000 00	—	15 000 00

## Panhandle Eastern Pipe Line Company

Statement Of Dividends Paid On Class A And Class B Preferred Stocks  
From Beginning To September 1, 1941

Line No.	Period to Which Applicable (A)	Date Paid (B)	Amount Paid		
			Ordinary (C)	Participating (D)	Total (E)
1	<u>Class B Preferred Stock</u> — (Continued)				
2	Quarter ended September 30, 1940	Oct. 1, 1940	\$ 15 000 00	\$ —	\$ 15 000 00
3	Quarter ended December 31, 1940	Jan. 1, 1941	15 000 00	—	15 000 00
4	Quarter ended March 31, 1941	Apr. 1, 1941	15 000 00	—	15 000 00
5	Quarter ended June 30, 1941	July 1, 1941	15 000 00	—	15 000 00
6	Total dividends paid on Class B Preferred Stock		\$ 330 000 00	—	\$ 330 000 00

## Panhandle Eastern Pipe Line Company

Statement Of Dividends Paid On Common Stock  
From Beginning To September 1, 1941

Line No.	Date Paid (A)	Amount Paid			Total (D)
		Ordinary (B)	Participating (C)		
1	December 16, 1937	\$ 364 326 00	—	\$	364 326 00
2	July 21, 1938	546 489 00	—		546 489 00
3	December 21, 1938	546 489 00	—		546 489 00
4	December 21, 1938	—	\$ 546 489 00		546 489 00
5	May 4, 1939	364 326 00	—		364 326 00
6	July 21, 1939	364 326 00	—		364 326 00
7	November 10, 1939	403 683 50	—		403 683 50
8	January 31, 1940	1 211 050 50	—		1 211 050 50
9	July 12, 1940	—	403 683 50		403 683 50
10	July 12, 1940	—	403 683 50		403 683 50
11	October 26, 1940	—	403 683 50		403 683 50
12	January 25, 1941	339 094 14(1)	—		339 094 14
13	March 20, 1941	403 683 50	—		403 683 50
14	June 9, 1941	403 683 50	—		403 683 50
15	Total Dividends Paid-				
16	on Common Stock	\$4 947 151 14	\$1 757 539 50	\$6 704 690 64(2)	

- 17 (1) In January, 1941, Panhandle Eastern Pipe Line Company distributed  
18 to the company's common stockholders in payment of a dividend,  
19 807,367 shares of common stock of a par value of 42 cents each,  
20 of Central Distributing Company (a wholly owned subsidiary).  
21 The concurrent charge to earned surplus was \$339,094.14.
- 22 (2) On March 24, 1936, the Board of Directors authorized a dividend  
23 to be paid by the issuance of 646,354 shares of common stock  
24 and fixed the price at which such shares were deemed to have  
25 been issued at \$15,017,300 to be charged to capital surplus.

## Panhandle Eastern Pipe Line Company And Subsidiaries

Statement Showing Comparison Of Sales And Revenue  
Principal Industrial Customers  
Years 1939, 1940 And 1941

Line No.	Customers (A)	Location (B)	Direct "D" Indirect "I" (C)	1939		1940		6 Months Actual		6 Mo
				MCF (D)	Revenue (E)	MCF (F)	Revenue (G)	MCF (H)	Revenue (I)*	MCF (J)
1	Harbison-Walker Refractories Co.	Fulton, Mo.	D	243 776	\$ 50 492 20	306 455	\$ 66 387 65	226 734	\$ 49 988 48	240 00
2	Harbison-Walker Refractories Co.	Vandalia, Mo.	D	524 482	108 140 01	636 022	136 943 19	345 240	76 060 80	370 00
3	Mexico Refractories Co.	Mexico, Mo.	D	446 588	91 913 49	463 161	99 878 55	284 848	62 774 56	285 00
4	Phillips Pipe Line Co.	Pump Stations	D	289 395	49 224 60	329 640	56 779 86	196 286	34 477 27	200 00
5	United Brick and Tile Co.	Vale, Mo.	D	139 570	24 119 20	147 339	25 362 24	52 534	9 028 80	90 00
6	Universal Atlas Cement Co.	Hannibal, Mo.	D	1 771 677	204 239 49	1 722 492	197 991 59	859 685	97 350 83	1 250 00
7	Walsh Refractories Corporation	Farber, Mo.	D	128 107	26 500 04	124 590	26 965 99	83 481	18 473 82	90 00
8	Marblehead Lime Co.	Quincy and Marblehead, Ill.	D	72 067	14 413 40	46 057	9 211 40	66 842	13 368 40	70 00
9	A. P. Green Fire Brick Co.	Mexico, Mo.	I	844 480	157 013 90	894 540	165 890 28	590 477	108 119 42	700 00
10	Marblehead Lime Co.	Hannibal, Mo.	I	119 470	23 531 44	114 195	22 011 10	55 176	10 484 41	65 00
11	Missouri Power & Light Co. Power Plants	Jefferson City, Mo.	I	1 203 413	134 775 16	1 310 718	145 901 73	675 722	73 981 82	750 00
12	Missouri Power & Light Co. Power Plants	Boonville, Mo.	I	257 607	29 092 96	220 239	24 737 50	104 577	11 510 24	120 00
13	Caterpillar Tractor Co.	Peoria, Ill.	I	273 835	50 664 30	337 141	60 597 33	206 627	36 257 47	210 00
14	Commercial Solvents Co.	Peoria, Ill.	I	502 517	91 750 75	518 099	92 032 34	265 383	46 250 10	270 00
15	International Harvester Co.	Canton, Ill.	I	114 387	21 963 66	224 154	40 754 16	118 153	21 026 21	120 00
16	Keystone Steel and Wire Co.	Bartonville, Ill.	I	1 789 060	304 554 94	1 906 541	318 002 11	1 045 805	172 807 38	1 080 00
17	Ball Bros.	Muncie, Ind.	I	2 138 991	332 409 61	2 025 116	337 642 84	1 148 145	190 975 95	1 350 00
18	Banner Rock Div. of Johns-Manville	Alexandria, Ind.	I	140 041	22 296 40	243 594	40 428 86	203 193	36 021 65	210 00
19	Delco-Remy Corp. — Plant #1	Anderson, Ind.	I	209 834	44 500 21	257 945	52 867 59	159 902	31 470 48	180 00
20	Delco-Remy Corp. — Div. of General Motors	Muncie, Ind.	I	242 472	49 891 36	317 508	62 275 36	209 142	39 486 30	210 00
21	Guide Lamp Corp.	Anderson, Ind.	I	102 084	23 696 43	109 033	23 897 12	88 399	19 190 55	100 00
22	Armstrong Cork Co. — Hart Glass Div.	Dunkirk, Ind.	I	73 626	17 389 95	240 311	42 961 40	239 788	42 458 58	300 00
23	Indiana Glass Co.	Dunkirk, Ind.	I	99 597	20 514 10	78 811	18 274 55	50 853	11 709 73	60 00
24	Indiana Steel and Wire Co.	Muncie, Ind.	I	163 856	36 474 45	171 157	37 887 25	109 725	23 303 37	110 00
25	The National Tile Co.	Anderson, Ind.	I	199 837	43 018 82	159 188	34 942 49	86 661	19 188 14	90 00
26	Owens-Illinois Glass Co.	Muncie & Gas City, Ind.	I	745 046	129 036 61	698 544	123 605 74	423 207	74 061 01	480 00
27	Warner Gear Co.	Muncie, Ind.	I	123 975	28 366 97	122 281	27 976 40	86 304	19 140 94	90 00
28	Chrysler Corp.	New Castle, Ind.	I	364 026	75 381 57	423 144	87 738 44	259 737	53 749 28	275 00
29	Ingram-Richardson Co.	Frankford, Ind.	I	123 106	29 485 30	130 763	31 368 41	77 090	18 501 74	87 00
30	Anchor-Hocking Glass Corp.									
31	formerly General Glass Corp.	Winchester, Ind.	I	1 203 066	241 728 55	1 221 849	241 495 26	607 974	113 400 75	660 00
32	Ingersoll Steel & Disc Div. of Borg-Warner	New Castle, Ind.	I	70 084	16 772 51	76 377	18 318 46	60 460	14 506 13	63 00
33	Stuck Glass Co.	Gas City, Ind.	I	220 219	41 440 27	264 276	47 831 88	148 453	26 312 65	160 00
34	Mid-States Steel & Wire Co.	Crawfordsville, Ind.	I	67 114	16 065 88	69 496	16 655 86	42 261	10 135 75	42 00
35	Hooper-Forbes Glass Co.	Marian, Ind.	I	472 015	79 006 91	396 755	67 687 90	227 020	40 248 92	250 00
36	Seath Glass Co.	Hartford City, Ind.	I	192 949	31 609 42	224 222	37 345 71	139 540	23 362 37	150 00
37	Stephens College	Columbia, Mo.	I	92 077	17 746 63	112 610	21 429 83	68 502	12 780 45	40 00
38	Clifford Jacobs Forging Co.	Champaign, Ill.	I	30 679	5 751 22	190 579	34 763 99	107 721	19 236 66	120 00
39	Continental Steel Corp.	Kokomo, Ind.	I	10 288	2 448 02	102 351	24 371 79	69 062	15 994 80	72 00
40	Totals			15 805 414	\$2 687 483 73	16 938 003	\$2 921 514 15	9 790 710	\$1 696 897 21	11 009 000



Comparison Of Sales And Revenue  
Industrial Customers  
1940 And 1941

Page 1

Witness Watkins

Year—1941

1940	6 Months Actual		6 Months Estimated		Total		Increase Year 1940 Over 1939		Increase Year 1941 Over 1939	
Revenue (G)	MCF (H)	Revenue (I)	MCF (J)	Revenue (K)	MCF (L)	Revenue (M)	MCF (N)	Revenue (O)	MCF (P)	Revenue (Q)
\$ 66 387 65	226 734	\$ 49 989 48	240 000	\$ 52 800 00	466 734	\$ 102 789 48	62 679	\$ 15 895 45	222 958	\$ 52 297 28
136 943 19	345 240	76 060 80	370 000	81 400 00	715 240	157 460 80	111 540	28 803 18	190 758	49 320 79
99 878 55	284 848	62 774 56	285 000	62 700 00	569 848	125 474 56	16 573	7 965 06	123 260	33 561 07
56 779 86	196 286	34 477 27	200 000	35 000 00	396 286	69 477 27	40 245	7 555 26	106 891	20 252 67
25 362 24	52 534	9 028 80	90 000	15 390 00	142 534	24 418 80	7 769	1 243 04	2 964	299 60
197 991 59	859 685	97 350 83	1 250 000	141 500 00	2 109 685	238 850 83	43 185	6 247 90	338 008	34 611 34
26 965 99	83 481	18 473 82	90 000	19 800 00	173 481	38 273 82	3 517	465 95	45 374	11 773 78
9 211 40	66 842	13 368 40	70 000	14 000 00	136 842	27 368 40	26 010	5 202 00	64 775	12 955 00
165 890 28	590 477	108 119 42	700 000	128 100 00	1 290 477	236 219 42	50 060	8 876 38	445 997	79 205 52
22 011 10	55 176	10 484 41	65 000	12 350 00	120 176	22 834 41	5 275	1 520 34	706	397 03
145 901 73	675 722	73 681 82	750 000	81 750 00	1 425 722	155 431 82	107 304	11 126 57	222 308	20 656 66
24 737 50	104 577	11 510 24	120 000	13 200 00	224 577	24 710 24	37 368	4 355 46	33 030	4 382 72
60 597 33	206 627	36 257 47	210 000	36 750 00	416 627	73 007 47	63 306	9 933 03	142 792	22 343 17
92 032 34	265 383	46 250 10	270 000	46 980 00	535 383	93 230 10	16 292	281 59	32 866	1 479 35
40 754 16	118 153	21 026 21	120 000	21 240 00	238 153	42 266 21	109 767	18 790 50	123 766	20 302 55
318 902 11	1 045 805	172 807 38	1 080 000	178 200 00	2 125 805	351 007 38	117 481	14 347 17	336 745	46 452 44
337 642 84	1 148 145	190 975 95	1 350 000	224 500 00	2 498 145	415 475 95	113 875	5 233 23	359 154	83 066 34
40 428 86	203 193	36 021 65	210 000	37 170 00	413 193	73 191 65	103 553	18 129 46	273 152	50 892 25
52 867 59	159 902	31 470 48	180 000	35 280 00	339 902	66 750 48	48 111	8 367 38	129 068	22 250 27
62 275 36	209 142	39 486 30	210 000	39 630 00	419 142	79 116 30	75 036	12 383 00	176 670	29 224 94
23 897 12	88 399	19 190 55	100 000	21 700 00	188 399	40 890 55	6 949	200 69	86 315	17 194 12
42 961 40	239 789	42 458 58	300 000	53 100 00	539 789	95 558 58	136 685	25 571 45	466 163	78 168 63
18 274 55	50 853	11 709 73	60 000	13 800 00	110 853	25 509 73	20 786	2 239 55	11 256	4 995 63
37 887 25	109 725	23 303 37	110 000	23 320 00	219 725	46 623 37	7 301	1 412 80	55 889	10 148 92
34 942 49	86 661	19 188 14	90 000	19 890 00	176 661	39 078 14	40 649	8 076 33	23 176	3 940 68
123 005 74	423 207	74 061 01	480 000	84 000 00	903 207	158 061 01	46 502	6 030 87	158 161	29 024 40
27 976 40	86 304	19 140 94	90 000	19 890 00	176 304	39 030 94	1 694	390 57	52 329	10 663 97
87 738 41	259 737	53 749 28	275 000	56 920 00	534 737	110 669 28	59 118	12 356 87	170 711	35 287 71
31 368 41	77 090	18 501 74	87 000	20 880 00	164 090	39 381 74	7 657	1 883 11	40 984	9 896 44
241 495 26	607 974	113 400 75	660 000	123 090 00	1 267 974	236 490 75	18 783	233 29	64 908	5 237 80
18 318 46	60 460	14 506 13	60 000	15 600 00	123 460	29 566 13	6 293	1 545 95	53 376	12 793 62
47 831 88	148 453	26 312 65	160 000	26 320 00	308 453	54 632 65	44 057	6 391 61	88 234	13 192 38
16 655 86	42 261	10 135 75	42 000	10 080 00	84 261	26 255 75	2 382	589 98	17 147	4 149 87
67 687 90	227 020	40 248 92	250 000	44 250 00	477 020	84 498 92	75 260	11 319 01	5 005	5 492 01
37 345 71	139 540	23 362 37	150 000	25 110 00	289 540	48 472 37	31 273	5 676 29	96 591	16 802 95
21 429 83	68 502	12 780 45	40 000	7 600 00	108 502	20 380 45	20 533	3 633 22	16 425	2 633 82
34 763 90	107 721	19 236 66	120 000	21 360 00	227 721	40 596 66	159 900	29 012 77	197 042	34 845 44
24 371 79	69 062	15 994 80	72 600	16 630 00	141 062	32 624 80	92 063	21 923 77	130 774	30 176 78
\$2 921 514 15	9 790 710	\$1 696 897 21	11 009 000	\$1 882 740 00	20 799 710	\$3 579 637 21	1 132 589	\$ 234 036 42	4 994 296	\$ 892 153 48

## Panhandle Eastern Pipe Line Company And Subsidiary Companies

Statement Showing Comparison Of Sales And Revenue  
Principal Industrial Customers  
Years 1939, 1940 And 1941

Line No.	Customer (A)	Location (B)	Direct "D" Indirect "I" (C)	1939		1940		1941	
				MCF (D)	Revenue (E)	MCF (F)	Revenue (G)	MCF (H)	Revenue (I)
1	Harbison-Walker Refractories Co.	Fulton, Mo.	D	243 776	\$ 59 492 20	306 455	\$ 66 387 65	479 182	\$ 103 881 44
2	Harbison-Walker Refractories Co.	Vandalia, Mo.	D	524 482	108 140 01	636 022	136 943 19	745 006	161 344 28
3	Mexico Refractories Co.	Mexico, Mo.	D	446 588	91 913 49	463 161	99 878 55	615 736	133 384 38
4	Phillips Pipe Line Co.	Pump Stations	D	289 395	49 224 60	329 640	56 779 86	414 233	73 549 22
5	United Brick and Tile Co.	Vale, Mo.	D	139 570	24 119 20	147 339	25 362 24	126 934	22 289 49
6	Universal Atlas Cement Co.	Hannibal, Mo.	D	1 771 677	201 239 49	1 722 492	197 991 59	2 197 092	257 773 58
7	Walsh Refractories Corporation	Farber, Mo.	D	128 107	26 500 04	124 590	26 965 99	191 825	41 664 59
8	Marblehead Lime Co.	Quincy and Marblehead, Ill.	D	72 067	14 413 40	46 057	9 211 40	139 130	27 826 00
9	A. P. Green Fire Brick Co.	Mexico, Mo.	I	844 480	157 013 90	894 540	165 890 28	1 316 155	240 491 04
10	Marblehead Lime Co.	Hannibal, Mo.	I	119 470	23 531 44	114 195	22 011 10	135 564	25 349 82
11	Missouri Power & Light Co. Power Plants	Jefferson City, Mo.	I	1 203 414	134 775 16	1 310 718	145 901 73	1 408 304	155 695 94
12	Missouri Power & Light Co. Power Plants	Boonville, Mo.	I	257 607	29 092 96	220 239	24 737 50	171 619	18 794 55
13	Caterpillar Tractor Co.	Peoria, Ill.	I	273 835	50 664 30	337 141	60 597 33	401 526	70 395 40
14	Commercial-Solvents Co.	Peoria, Ill.	I	502 517	91 750 75	518 809	92 032 34	539 348	93 798 22
15	International Harvester Co.	Canton, Ill.	I	114 387	21 963 66	224 151	40 754 16	250 787	44 476 17
16	Key Stone Steel and Wire Co.	Bartonville, Ill.	I	1 789 060	304 554 94	1 906 541	318 902 41	2 066 051	340 944 99
17	Ball Bros.	Muncie, Ind.	I	2 138 991	332 409 61	2 025 116	337 642 84	2 783 027	460 265 37
18	Banner Rock Div. of Johns-Mansville	Alexandria, Ind.	I	140 041	22 299 40	243 594	40 428 86	403 615	71 477 30
19	Delco-Remy Corp. — Plant #1	Anderson, Ind.	I	209 834	44 500 21	257 945	52 867 59	322 525	63 392 97
20	Delco-Remy Corp. — Div. of General Motors	Muncie, Ind.	I	242 472	49 891 36	317 508	62 275 36	424 659	82 516 55
21	Guide Lamp Corp.	Anderson, Ind.	I	102 084	23 696 43	109 033	23 897 12	176 022	38 621 89
22	Armstrong Cork Co. — Hart Glass Div.	Dunkirk, Ind.	I	73 626	17 389 95	240 311	42 981 40	552 481	97 102 73
23	Indiana Glass Co.	Dunkirk, Ind.	I	99 597	20 514 10	78 811	18 274 55	103 340	23 842 63
24	Indiana Steel and Wire Co.	Muncie, Ind.	I	163 956	36 474 45	171 157	37 887 25	217 618	46 314 93
25	The National Tile Co.	Anderson, Ind.	I	199 837	43 018 82	159 188	34 942 49	167 731	37 277 16
26	Owens-Illinois Glass Co.	Muncie & Gas City, Ind.	I	745 046	129 036 61	698 544	123 005 74	1 086 136	187 362 71
27	Warner Gear Co.	Muncie, Ind.	I	123 975	28 366 97	122 281	27 976 40	134 140	42 143 75
28	Chrysler Corp.	New Castle, Ind.	I	364 026	75 381 57	423 144	87 738 44	563 328	104 249 96
29	Ingram-Richardson Co.	Frankford, Ind.	I	123 106	29 485 30	130 763	31 368 41	160 140	38 390 41
30	Anchor-Hocking Glass Corp.								
31	formerly General Glass Corp.	Winchester, Ind.	I	1 203 066	241 728 55	1 221 849	241 495 26	1 222 643	227 869 61
32	Ingersoll Steel & Disc. Div. of Borg-Warner	New Castle, Ind.	I	70 084	16 772 51	76 377	18 318 46	129 147	30 925 20
33	Slick Glass Co.	Gas City, Ind.	I	220 219	41 440 27	264 276	47 831 88	339 566	69 127 04
34	Mid-States Steel and Wire Co.	Crawfordsville, Ind.	I	67 114	16 065 88	69 496	16 655 86	82 607	19 797 76
35	Foster Forbes Glass Co.	Marian, Ind.	I	472 015	79 006 91	396 755	67 687 90	485 328	85 946 38
36	Sneath Glass Co.	Hartford City, Ind.	I	192 949	31 669 42	224 221	37 345 71	276 256	46 336 39
37	Stephens College	Columbia, Mo.	I	92 077	17 746 63	112 610	21 429 83	102 851	19 257 03
38	Clifford Jacobs Forging Co.	Champaign, Ill.	I	30 679	5 751 22	190 579	34 763 99	232 970	41 420 26
39	Continental Steel Corp.	Kokomo, Ind.	I	10 288	2 448 02	102 351	24 371 79	138 453	32 025 90
40	Totals			15 805 414	\$2 687 483 73	16 938 003	\$2 921 514 15	21 303 075	\$3 668 353 04

41 \$ Denotes red figures.



panies

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1940		1941		Increase Year 1940 Over 1939		Increase Year 1941 Over 1939	
Revenue (G)	MCF (H)	Revenue (I)	MCF (J)	Revenue (K)	MCF (L)	Revenue (M)	
455 \$ 66 387 65	479 182	\$ 103 881 44	62 679	\$ 15 895 45	235 406	\$ 53 389 24	
022 136 943 19	745 006	161 344 28	111 540	28 803 18	220 524	53 204 27	
161 99 878 55	615 736	133 384 38	16 573	7 965 06	169 148	41 470 89	
640 56 779 86	414 233	73 549 22	40 245	7 555 26	124 838	24 324 62	
339 25 362 24	126 934	22 289 49	7 769	1 243 04	12 636	1 829 71	
2 492 197 991 59	2 197 092	257 773 58	49 185	6 247 90	425 415	53 534 09	
590 26 965 99	191 825	41 664 59	3 517	465 95	63 718	15 164 55	
057 9 211 40	139 130	27 826 00	26 010	5 202 00	67 063	13 412 60	
540 165 890 28	1 316 155	240 491 04	50 060	8 876 38	471 675	83 477 14	
195 22 011 10	135 564	25 349 82	5 275	1 520 34	16 094	1 818 38	
718 145 901 73	1 408 304	155 695 94	107 304	11 126 57	204 890	20 920 78	
239 24 737 50	171 619	18 794 55	37 368	4 355 46	85 988	10 298 41	
141 60 597 33	401 526	70 395 40	63 306	9 933 03	127 691	19 731 10	
809 92 032 34	539 348	93 798 22	16 292	281 59	36 831	2 047 47	
154 40 754 16	250 787	44 476 17	109 765	18 790 50	136 400	22 512 51	
541 318 902 11	2 066 051	340 944 99	117 481	14 347 17	276 991	36 390 05	
116 337 642 84	2 783 027	460 265 37	113 875	5 233 22	644 036	127 855 76	
594 40 428 86	463 615	71 477 30	103 553	18 129 46	263 574	49 177 90	
945 52 867 59	322 525	65 392 97	48 111	8 367 88	142 691	18 892 76	
508 62 275 36	424 659	82 516 55	75 036	12 38 00	182 187	32 625 19	
033 23 897 12	176 022	38 621 89	6 949	200 69	73 938	14 925 46	
314 42 961 40	552 481	97 102 73	166 685	25 571 45	478 855	79 712 78	
811 18 274 55	103 340	23 842 63	20 786	2 239 55	3 743	3 328 53	
157 37 887 25	217 618	46 314 93	7 301	1 412 80	53 762	9 840 48	
188 34 942 49	167 731	37 277 16	40 649	8 076 33	32 106	5 741 66	
544 123 005 74	1 086 136	187 362 71	46 502	6 030 87	341 090	58 326 10	
281 27 976 40	194 140	42 143 75	1 694	390 57	70 165	13 776 78	
144 87 738 44	503 328	104 249 96	59 118	12 356 87	139 302	28 868 39	
763 31 368 41	160 140	38 390 41	7 657	1 883 11	37 034	8 905 11	
849 241 495 26	1 222 643	227 869 61	18 783	233 29	19 577	13 858 94	
377 18 318 46	129 147	30 955 20	6 293	1 545 95	59 063	14 182 69	
276 47 831 88	339 566	60 127 04	44 057	6 391 61	119 347	18 686 77	
496 46 655 86	82 607	19 797 76	2 382	589 98	15 493	3 731 88	
755 67 687 90	485 328	85 946 38	75 260	11 319 01	13 313	6 939 47	
222 37 345 71	276 256	46 336 39	31 273	5 676 29	83 307	14 666 97	
610 21 429 83	102 831	19 257 03	20 533	3 683 20	10 774	1 510 49	
579 34 763 99	232 970	41 420 26	159 900	29 012 77	202 291	35 669 04	
351 24 371 70	138 453	32 025 90	92 063	21 923 77	128 165	29 577 88	
903 \$2 921 514 15	21 303 075	\$3 668 353 04	1 122 589	\$234 030 42	5 497 661	\$980 869 31	

 Received in Evidence after Adjournment of Hearing Pursuant to Ruling T 10505  
 H. CROSBY, Trial Examiner.

## Panhandle Eastern Pipe Line Company And Subsidiary Companies

Statement of Gas Produced  
Period From April 1, 1932 to June 30, 1941

## "Panhandle" MCF

Line No.	Year (A)	Amarillo Field (B)	Hugoton Field (C)	Other (D)	Totals (1) and (2) (E)
1	1932 (3)	1 225 165	1 077 602	247 042	2 549 809
2	1933	2 541 947	2 115 348	272 371	4 929 666
3	1934	4 465 133	2 177 399	204 973	6 787 505
4	1935	5 816 410	2 452 716	117 513	8 386 639
5	1936	9 057 076	4 359 663	110 974	13 527 713
6	1937	11 919 995	5 498 206	93 423	17 511 624
7	1938	12 457 776	4 342 590	58 636	16 859 002
8	1939	16 176 715	5 679 973	49 188	21 905 876
9	1940	19 743 030	6 796 044	39 683	26 578 757
10	Cumulative Totals	83 343 247	34 499 541	1 193 803	119 036 591
11	Average (8-3/4 yr)	9 524 942	3 942 805	136 435	13 604 182
12	1941 (4)	11 914 524	3 536 924	15 823	15 467 271

13 (1) As measured (16.4" Absolute pressure base)

14 (2) Includes royalty gas subsequent to November 1, 1936

15 (3) 9 Months — April 1 to December 31, 1932

16 (4) 6 Months — January 1 to June 30, 1941



## Panhandle Eastern Pipe Line Company And Subsidiary Companies

Statement of Gas Revenue  
Period From April 1, 1932 To June 30, 1941

Line No.	Year (A)	Residential			Commercial			Industrial			Sales to Gas Utilities			Other	
		MCF (B)	Average Per MCF (C)	Amount (D)	MCF (E)	Average Per MCF (F)	Amount (G)	MCF (H)	Average Per MCF (I)	Amount (J)	MCF (K)	Average Per MCF (L)	Amount (M)	MCF (N)	Average Per MCF (O)
1	1932 (1)	68 710	72.86	\$ 50 062 15	44 240	47.96	\$ 21 216 11	471 706	17.91	\$ 84 483.86	5 465 608	21.78	\$ 1 190 466 87	—	—
2	1933	120 789	73.51	88 797 13	76 174	47.64	36 288 26	1 978 129	13.96	276 078.89	9 275 286	21.71	2 013 711 39	13 037	11.67
3	1934	133 856	73.30	98 110 55	86 596	47.81	41 399 29	2 227 730	14.00	311 800 72	10 983 472	21.73	2 386 428 87	65 995	10.90
4	1935	161 494	72.54	117 149 15	109 977	46.55	51 193 60	2 205 048	15.08	332 444 94	13 394 691	21.35	2 859 427 43	108 180	10.79
5	1936	184 970	69.92	129 336 48	128 406	45.18	58 013 01	3 480 449	16.46	573 015 64	22 646 017	22.18	5 021 821 23	308 089	10.87
6	1937	206 259	69.69	143 748 69	142 103	45.30	64 371 17	3 145 623	17.50	550 506 69	36 973 685	22.76	8 415 974 84	339 292	11.26
7	1938	195 191	71.55	139 653 30	126 361	45.86	57 952 18	2 975 257	15.75	468 461 94	37 675 240	23.48	8 847 855 14	213 713	12.65
8	1939	213 383	71.01	151 525 26	136 298	45.92	62 586 92	3 759 850	15.95	599 835 37	44 975 941	23.64	10 631 445 06	147 600	10.84
9	1940	278 037	66.90	186 018 44	172 617	44.32	76 497 50	4 039 833	16.66	673 091 89	51 841 845	23.58	12 222 934 95	62 430	13.93
10	Cumulative Totals	1 562 689	70.67	\$1 104 401 15	1 022 772	45.91	\$469 518 04	24 283 625	15.94	\$3 869 719.94	233 231 785	22.98	\$53 590 065 78	1 258 336	11.43
11	Average (8 $\frac{3}{4}$ Yr.)	178 593	70.67	\$ 126 217 28	116 888	45.91	\$ 53 659 21	2 775 272	15.94	\$ 1442 253 71	26 655 061	22.98	\$ 6 124 578 94	143 810	11.43
12	1941 (2)	8 358	65.20	\$ 5 449 71	349	52.91	\$ 184 66	2 307 895	17.35	\$ 400 342 43	30 080 226	23.80	\$ 7 158 969 43	757	10.00

13 (1) 9 Months — April 1, to December 31, 1932.

14 (2) 6 Months — January 1 to June 30, 1941.



Exhibit 58

Schedule 1

Witness Watkins

y Companies

1

Sales to Gas Utilities			Other			Totals		
Average Per MCF (L)	Amount (M)		MCF (N)	Average Per MCF (O)	Amount (P)	MCF (Q)	Average Per MCF (R)	Amount (S)
608	21.78	\$ 1 190 466 87	—	—	\$ —	6 050 264	22.25	\$ 1 346 228 99
286	21.71	2 013 711 39	13 037	11.67	1 521 95	11 463 415	21.08	2 416 397 62
472	21.73	2 386 428 87	65 995	10.90	7 195 20	13 497 649	21.08	2 844 934 63
691	21.35	2 859 427 43	108 180	10.79	11 667 68	15 979 390	21.10	3 371 882 80
017	22.18	5 021 821 23	308 089	10.87	33 495 95	26 747 931	21.74	5 815 682 31
685	22.76	8 415 974 84	339 292	11.26	38 220 56	40 806 962	22.58	9 212 821 95
240	23.48	8 847 855 14	213 713	12.65	27 045 29	41 185 762	23.17	9 540 967 85
941	23.64	10 631 445 06	147 600	10.84	15 995 70	49 233 072	23.28	11 461 388 31
845	23.58	12 222 934 95	62 430	13.93	8 698 95	86 394 762	23.35	13 167 241 73
785	22.98	\$53 590 065 78	1 258 336	11.43	\$143 841 28	261 359 207	22.64	\$59 177 546 19
061	22.98	\$ 6 124 578 94	143 810	11.43	\$ 16 439 00	29 869 824	22.64	\$ 6 763 148 14
226	23.80	\$ 7 158 969 43	757	10.00	\$ 75 70	32 397 585	23.35	\$ 7 565 021 93



## Panhandle Eastern Pipe-Line Company And Subsidiary Companies.

Detail Of Sales To Gas Utilities  
Years 1939 And 1940

Line No.	Company (A)	Point of Delivery (B)	Year 1939			Year 1940		
			MCF (C)	Average Revenue per MCF (D)	Revenue (E)	MCF (F)	Average Revenue per MCF (G)	Revenue (H)
1	Sales to Gas Utilities							
2	Texas —							
3	Panhandle Power and Light Company	Gruver	7 909	33.37	\$ 2 638 85	8 733	33.30	\$ 2 907 85
4	Kansas —							
5	American Gas Company	Hartford, Waverly and Williamsburg	9 728	33.14	3 224 10	11 328	33.06	3 745 60
6	Argus Natural Gas Company, Inc.	(15) Towns	872 003	6.23	54 330 06	960 184	6.16	59 148 63
7	Cities Service Gas Company	Near Kansas City	942 506	19.79	186 523 54	473 090	20.00	94 618 00
8	Gas Service Company	Osawatomie, Paola and Rantoul	212 098	21.84	46 317 40	259 656	22.16	57 528 75
9	Kansas Gas and Fuel Company	Kincaid and Mildred	3 703	33.07	1 224 45	4 964	31.97	1 586 93
10	Louisburg Gas Company	Louisburg	8 403	25.00	2 100 75	13 697	25.00	3 424 25
11	Prairie Pipe Line Company	Stanley	863	25.00	215 75	918	25.00	229 50
12	Total Kansas		2 049 304	14.34	293 936 05	1 723 837	12.78	220 281 66
13	Missouri —							
14	Bowling Green Gas Company	Bowling Green	43 197	33.94	14 661 68	53 051	28.61	15 175 77
15	Central West Utility Company	Liberty	112 462	32.36	36 390 07	133 460	28.15	37 565 14
16	Citizens Gas Company	Hannibal	373 401	27.59	103 010 88	410 468	27.00	110 807 81
17	City of Fulton	Fulton	31 729	38.89	12 338 58	49 091	85.17	17 265 72
18	Cities Service Gas Company	Near Kansas City	8 587	19.93	1 711 06	16 533	20.00	3 306 60
19	Interstate Gas Company	Harrisonville	53 732	30.75	16 523 91	52 798	31.94	16 862 40
20	Lee's Summit Gas Company	Lee's Summit	54 889	33.55	18 416 43	67 509	32.43	21 893 02
21	Missouri Edison Company	Louisiana	88 389	29.13	25 745 03	94 610	31.16	29 478 40
22	Missouri Power and Light Company	(15) Towns	3 218 528	18.20	585 913 20	3 526 682	18.04	636 260 95
23	Missouri Utilities Company	Columbia	314 106	32.13	100 935 81	405 287	30.79	124 772 14
24	Total Missouri		4 299 020	21.30	915 646 65	4 809 489	21.07	1 013 387 95
25	Illinois —							
26	Central Illinois Electric and Gas Co.	Lincoln	97 323	30.89	30 060 59	105 104	29.67	31 188 11
27	Central Illinois Light Company	Bartonville, Pekin, Peoria and Springfield	5 004 423	24.63	1 232 571 25	5 662 709	23.40	1 325 215 08
28	Central Illinois Public Service Co.	Canton, Hoopeston, Quincy and Taylorville	692 668	31.58	218 735 64	891 325	28.05	250 052 65
29	Citizens Gas Company	Chrisman, Newman, Tuscola and Villa Grove	14 021	35.08	4 919 17	44 619	34.96	15 596 74
30	City of Pittsfield	Pittsfield	11 400	33.20	3 785 05	17 581	34.19	6 010 55
31	City of Roodhouse	Roodhouse	8 127	35.26	2 865 70	13 364	34.29	4 583 10
32	City of White Hall	White Hall	6 123	32.24	1 974 12	10 773	33.27	3 583 89
33	Illinois Iowa Power Company	Champaign — Urbana, Danville, Decatur and Jacksonville	1 440 548	30.36	437 287 97	1 698 668	28.00	475 685 61
34	Total Illinois		7 274 633	26.56	\$1 932 199 49	8 444 143	25.01	\$ 2 111 915 73

[fol. 13226]

Exhibit 58  
Schedule 2

Page 2

Witness Watkins

## Panhandle Eastern Pipe Line Company And Subsidiary Companies

Detail Of Sales To Gas Utilities  
Years 1939 And 1940

Line No.	Company (A)	Point of Delivery (B)	Year 1939			Year 1940		
			MCF (C)	Average Revenue per MCF (D)	Revenue (E)	MCF (F)	Average Revenue per MCF (G)	Revenue (H)
1	<u>Sales to Gas Utilities.</u>							
2	Indiana —							
3	Kentucky Natural Gas Corporation	Near Dana	1 706 635	20.96	\$ 357 763 32	2 112 080	21.36	\$ 451 121 15
4	Michigan Gas Transmission Corporation	Near Dana	11 191 471	20.50	2 294 229 35	12 311 597	21.08	2 595 809 96
5	Total Indiana		12 898 106	20.56	2 651 992 67	14 423 677	21.12	3 046 931 11
6	Michigan —							
7	Michigan Consolidated Gas Company	(Detroit) Melvindale	18 364 737	26.22	4 814 330 44	21 976 727	25.99	5 710 820 17
8	Michigan Consolidated Gas Company	(Ann Arbor) Near Carlton	27 217	27.29	7 427 61	304 546	25.56	77 846 40
9	Total Michigan		18 391 954	26.22	4 821 758 05	22 281 273	25.98	5 788 666 57
10	Ohio —							
11	Central States Natural Gas Company	Near Paulding	4 766	24.85	1 184 39	13 088	26.39	3 453 53
12	Ohio Gas Light and Coke Company	Near Wauseon	50 249	24.06	12 088 91	119 062	25.86	30 789 21
13	Toledo Edison Company	Defiance	—	—	—	18 543	24.81	4 601 34
14	Total Ohio		55 015	24.13	13 273 30	150 693	25.78	38 844 08
15	Total Sales to Utilities		44 975 941	23.64	\$10 631 445 06	51 641 845	23.58	\$12 222 934 95

[fol. 13227]

Exhibit 58.

Schedule 3

Page 1

Witness Watkins

## Panhandle Eastern Pipe Line Company And Subsidiary Companies

Detail Of Sales To Industrial Customers  
Years 1939 And 1940

Line No.	Name (A)	Gas Used For (B)	Year 1939			Year 1940		
			MCF (C)	Average Revenue Per MCF (D)	Revenue (E)	MCF (F)	Average Revenue Per MCF (G)	Revenue (H)
1	Sales to Industrial Customers							
2	Kansas —							
3	Phillips Petroleum Company	Fuel for Pumping	155 719	15.47	\$ 24 097 14	159 871	15.68	\$ 25 064 88
4	Bartlesville, Oklahoma	Stations at:						
5		Paola and Sharpe, Kansas						
6	State of Kansas	Fuel at State Hospital,				35 753	16.06	5 740 32
7	Topeka, Kansas	Osawatomie, Kansas						
8	Total Kansas		155 719	15.47	24 097 14	195 624	15.75	30 805 20
9	Missouri —							
10	Edwarda-Conley Brick & Tile Company	Manufacture of Ceramics	62 572	20.81	13 018 47	41 508	21.95	9 109 89
11	Columbia, Missouri							
12	Fayette Brick and Tile Company	Manufacture of Ceramics	29 658	21.38	6 341 87	21 993	22.26	4 890 39
13	Fayette, Missouri							
14	Freiling Greenhouses	Heating of Greenhouses	1 245	34.92	434 70	1 738	34.04	591 70
15	Hannibal, Missouri							
16	Harbison-Walker Refractories Company	Manufacture of Ceramics at						
17	Pittsburgh, Pennsylvania	Fulton and Vandalia, Missouri	768 258	20.65	158 632 21	942 477	21.57	203 330 84
18	Mexico Refractories Company	Manufacture of Ceramics	446 588	20.58	91 913 49	463 161	21.56	99 878 55
19	Mexico, Missouri							
20	North American Refractories Company	Manufacture of Ceramics at						
21	Cleveland, Ohio	Farber, Missouri				64 032	21.92	14 038 36
22	Phillips Petroleum Company	Fuel for Pumping						
23	Bartlesville, Oklahoma	Stations at Harrisonville,						
24		Jefferson City and Leeton, Mo.	133 676	18.80	25 127 46	169 769	18.68	31 714 98
25	W. J. Small Company, Inc.	Manufacture of Dehydrated Alfalfa						
26	Neodesha, Kansas	Meal at Liberty, Missouri				33 711	16.50	5 561 76



(fol. 13228)

## Exhibits 58

Schedule 3

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Witness Watkins

## Panhandle Eastern Pipe Line Company And Subsidiary Companies

Detail Of Sales To Industrial Customers  
Years 1939 And 1940

			Year 1939			Year 1940		
Line No.	Name (A)	Gas Used For (B)	MCF (C)	Average Revenue Per MCF (D)	Revenue (E)	MCF (F)	Average Revenue Per MCF (G)	Revenue (H)
1	Sales to Industrial Customers							
2	Missouri — (Continued)							
3	United Brick and Tile Company	Manufacture of Ceramics						
4	Kansas City, Missouri	at Vafe, Missouri	139 570	17 28	\$ 24 119 20	147 339	17 21	\$ 25 362 24
5	Universal Atlas Cement Company	Manufacture of Cement						
6	New York, N. Y.	at Hannibal, Missouri	1 771 677	11 53	204 239 49	1 722 492	11 49	197 991 59
7	Walsh Refractories Corporation	Manufacture of Ceramics						
8	St. Louis, Missouri	at Farber, Missouri	128 107	20 69	26 500 04	124 590	21 64	26 965 99
9	Total Missouri		3 481 351	15 81	550 326 93	3 732 810	16 59	619 442 49
10	Illinois —							
11	Black White Lime Company							
12	Quincy, Illinois	Manufacture of Lime	23 912	20 00	4 782 40	30 412	20 00	6 082 40
13	Heckenkamp Florist, Inc.							
14	Quincy, Illinois	Heating of Greenhouses	8 032	30 65	2 461 70	5 349	30 55	1 634 20
15	Marblehead Lime Company	Manufacture of Lime						
16	Chicago, Illinois	at Quincy, and Lime and Rock Wool						
17		at Marblehead, Illinois	72 067	20 00	14 413 40	46 057	20 00	9 211 40
18	Mencke Stone and Lime Company							
19	Quincy, Illinois	Manufacture of Lime	18 769	20 00	3 753 80	29 581	20 00	5 916 20
20	Total Illinois		122 780	20 70	25 411 30	111 399	20 51	22 844 20
21	Total Sales to Industrial Customers		3 759 850	15 95	\$ 599 835 87	4 039 833	16 66	\$ 673 091 89

[fol. 13229]

**Panhandle Eastern Pipe Line Company and Subsidiary Companies**  
**Statement Of Gas Revenue By States**  
**Period From April 1, 1932 To December 31, 1941**

Line No.	Period (A)	Texas		Oklahoma		Kansas		Missouri		Illinois		Indiana	
		MCF (B)	Amount (C)	MCF (D)	Amount (E)	MCF (F)	Amount (G)	MCF (H)	Amount (I)	MCF (J)	Amount (K)	MCF (L)	Amount (M)
1	1932 (1)	6 161	\$ 2 503 44	—	\$ —	1 876 199	\$ 280 091 16	1 601 225	\$ 357 926 63	1 371 294	\$ 460 538 46	1 195 385	\$ —
2	1933	17 620	4 232 62	—	—	2 690 596	430 111 09	3 903 073	771 313 49	3 240 689	920 651 76	1 011 437	—
3	1934	37 149	6 624 59	—	—	2 845 106	449 272 17	4 160 615	819 274 06	4 738 430	1 259 020 99	1 726 349	—
4	1935	58 429	8 779 01	—	—	2 866 513	468 871 27	4 785 846	965 812 26	5 898 948	1 501 852 54	2 369 654	—
5	1936	122 866	15 684 22	10 538	1 053 80	2 596 928	398 186 44	6 806 318	1 375 477 12	7 254 476	1 853 085 13	6 229 747	—
6	1937	94 356	12 484 40	4 299	429 90	1 400 042	215 662 62	8 144 361	1 674 233 20	7 554 821	1 966 080 17	7 639 485	—
7	1938	62 319	10 248 55	4 028	604 20	1 326 677	198 894 60	8 419 584	1 664 090 85	6 601 142	1 799 224 12	8 739 715	—
8	1939	105 887	13 587 36	—	—	2 373 262	391 645 04	8 009 919	1 610 196 14	7 398 929	1 958 935 75	12 898 106	—
9	1940	11 168	4 429 10	—	—	2 199 478	336 712 70	8 860 840	1 815 299 29	8 557 633	2 136 358 88	14 423 677	—
10	Accumulative Totals	515 955	\$ 78 573 29	18 865	\$ 2 087 90	19 854 801	\$ 3 169 447 09	54 681 781	\$11 083 683 04	52 616 362	\$13 855 747 80	56 833 555	\$ —
12	Average (8-3.4 Yr.)	58 906	\$ 8 979 81	2 156	\$ 238 62	2 269 120	\$ 362 222 53	6 249 346	\$ 1 266 706 63	6 013 299	\$ 1 583 514 03	6 495 264	\$ —
13	1941 (2)	7 091	\$ 2 847 92	74	\$ 43 68	1 091 159	\$ 137 836 45	4 940 178	\$ 993 491 96	4 824 233	\$ 1 235 107 07	8 534 021	\$ —

14 (1) 9 Months — April 1 to December 31, 1932

15 (2) 6 Months — January 1 to June 30, 1941



Exhibit 59  
Witness Watkins

pe Line Company and Subsidiary Companies  
ent Of Gas Revenue By States  
April 1, 1932 To December 31, 1941

Date	Illinois		Indiana		Michigan		Ohio		Total	
	MCF (J)	Amount (K)	MCF (L)	Amount (M)	MCF (N)	Amount (O)	MCF (P)	Amount (Q)	MCF (R)	Amount (S)
26 63	1 371 294	\$ 460 538 46	1 195 385	\$ 215 169 30	—	\$ —	—	\$ —	6 050 264	\$ 1 346 228 99
43 49	3 240 689	920 651 76	1 611 437	290 058 66	—	—	—	—	11 463 415	2 416 397 62
74 06	4 738 430	1 259 020 99	1 726 349	310 742 82	—	—	—	—	13 497 649	2 844 934 63
42 26	5 898 948	1 501 852 54	2 369 654	426 537 72	—	—	—	—	15 979 390	3 371 882 80
77 12	7 254 476	1 853 085 13	6 229 747	1 206 709 40	3 957 058	965 396 20	—	—	26 747 931	5 815 682 31
33 20	7 554 821	1 966 080 17	7 639 485	1 512 673 60	15 969 598	3 831 258 06	—	—	40 806 962	9 212 821 95
90 85	6 601 142	1 799 224 12	8 739 715	1 844 611 96	16 032 297	4 023 293 57	—	—	41 185 762	9 540 967 85
96 14	7 398 929	1 958 935 75	12 898 106	2 651 992 67	18 391 954	4 821 758 05	55 015	13 273 30	49 233 072	11 461 388 31
99 29	8 557 633	2 136 858 88	14 423 677	3 046 931 11	22 281 273	5 788 666 57	150 693	38 844 08	56 394 762	13 167 241 73
83 04	52 616 362	\$13 855 747 80	56 833 555	\$11 505 517 24	76 632 180	\$19 430 372 45	205 708	\$ 52 117 38	261 359 207	\$59 177 546 19
06 63	6 013 299	\$ 1 583 514 03	6 495 264	\$ 1 314 916 25	8 757 963	\$ 2 220 614 00	23 510	\$ 5 956 27	29 869 624	\$ 6 763 148 14
91 96	4 824 233	\$ 1 235 107 07	8 534 021	\$ 1 811 221 81	12 905 811	\$ 3 339 483 23	95 018	\$ 24 989 81	32 397 585	\$ 7 565 021 93

[fol. 13230]

## Exhibit 60

Panhandle Eastern Pipe Line Company  
 Sales Agreements With Other Gas Companies  
 As At June 30, 1941

Page 1

Witness Watkins

## Agreement or FPC Rate Schedule

Line No.	Customer (A)	Territory Served (B)	Date (C)	Term or Expiration (D)
1		<u>Firm Service</u>		
2	Argus Natural Gas Company, Inc.	15 towns in Southwestern Kansas	1/18/29	1/17/49
3	Omaha, Nebraska			(Intrastate Sale)
4	American Gas Company	Hartford, Waverly and Williamsburg, Kansas	5/ 5/41	Cancellable 5/5/42 or thereafter on anniversaries
5	Bartlesville, Oklahoma			(Rate Schedule FPC Number 37)
6				
7	Battle Creek Gas Company	Battle Creek, Michigan	6/ 9/41	Cancellable 15 years after first delivery or thereafter on 6 months' notice. (Deliveries not commenced nor agreement filed with FPC at 6/30/41)
8	Battle Creek, Michigan			
9				
10				
11				
12	Bowling Green Gas Company	Bowling Green, Missouri	5/13/41	Cancellable 5/13/42 or thereafter on anniversaries
13	Bowling Green, Missouri			(Rate Schedule FPC Number 33)
14				
15	Central Distributing Company	Approximately 8 towns in Kansas and Missouri	12/22/32	Cancellable at will of either party.
16	Kansas City, Missouri			(Rate Schedule FPC Number 11)
17	Central Distributing Company	Approximately 22 towns in Kansas and Missouri	5/18/40	Cancellable 5/21/42 or thereafter on anniversaries
18	Kansas City, Missouri			(Rate Schedule FPC Number 34)
19	Central Distributing Company	Schools and Churches in Kansas and Missouri	5/15/40	Cancellable at will of either party.
20	Kansas City, Missouri			(Rate Schedule FPC Number 34)
21	Central States Natural Gas Co., Inc.	Paulding, Ohio	6/12/39	Cancellable 12/31/51 or thereafter on anniversaries
22	Paulding, Ohio			(Rate Schedule FPC Number 24)
23				
24	Central West Utility Company	Liberty, Smithville and Avondale, Missouri	11/ 4/35	Cancellable 1/2/46 or thereafter on anniversaries
25	Kansas City, Missouri			(Rate Schedule FPC Number 32)
26				
27	Cities Service Gas Company	Kansas City, Missouri		Day to day basis while agreement is under negotiation
28	Bartlesville, Oklahoma			
29	Citizens Gas Company of Hannibal	Hannibal, Missouri	4/ 2/31	Cancellable 9/24/41 or thereafter on anniversaries
30	Hannibal, Missouri			(Rate Schedule FPC Number 29)
31				

[fol. 13231]

## Exhibit 60

Page 2  
Witness Watkins

Panhandle Eastern Pipe Line Company  
Sales Agreements With Other Gas Companies  
As At June 30, 1941

## Agreement or FPC Rate Schedule

Line No.	Customer (A)	Territory Served (B)	Date (C)	Term or Expiration (D)
1		<u>Firm Service (Cont.)</u>		
2	City of Fulton		11/30/35	Cancellable 5/12/46 or thereafter on anniversaries.
3	Fulton, Missouri	Fulton, Missouri		(Rate Schedule FPC Number 30)
4				
5	Consumers Power Company	Pontiac, Flint, Owosso, Jackson, Kalamazoo and	4/30/41	Cancellable 15 years after first delivery or thereafter on 6 months' notice. (Deliveries not commenced nor agreement filed with FPC at 6/30/41).
6	Jackson, Michigan	other nearby towns and villages in Michigan		
7				
8				
9				
10	Gas Service Company			Month to month basis
11	Kansas City, Missouri	Osawatomie, Paola and Rantoul, Kansas		(Intrastate Sale)
12	Illinois Natural Gas Company	For resale to utilities, municipalities and	6/30/38	Cancellable 6/30/43 or thereafter on 12 months' notice.
13	Kansas City, Missouri	industrial customers in Illinois		
14	Interstate Gas Company		5/1/38	Cancellable 4/30/42 or thereafter on anniversaries.
15	Harrisonville, Missouri	Harrisonville, Missouri		(Rate Schedule FPC Number 31)
16				
17	Kansas Gas and Fuel Company		3/5/31	Cancellable 8/25/41 or thereafter on anniversaries.
18	Kansas City, Missouri	Kincaid and Mildred, Kansas		(Rate Schedule FPC Number 27)
19				
20	Kentucky Natural Gas Company		6/17/38	Expires 9/1/53.
21	Owensboro, Kentucky	Kentucky and Indiana		(Rate Schedule FPC Number 21)
22	Lee's Summit Gas Company		2/24/40	Cancellable 2/24/42 or on anniversaries.
23	Lee's Summit, Missouri	Lee's Summit, Missouri		(Intrastate Sale)
24	Louisburg Gas Company		5/9/28	While local gas is available.
25	Louisburg, Kansas	Louisburg, Kansas		(Intrastate Sale)
26	Michigan Consolidated Gas Company		8/31/35	Cancellable 1/1/52 or thereafter on anniversaries.
27	Detroit, Michigan	Detroit, Michigan		(Rate Schedule FPC Number 12)
28				
29	Michigan Consolidated Gas Company		4/20/37	Cancellable 1/1/52 or thereafter on anniversaries.
30	Detroit, Michigan	Ann Arbor, Michigan		(Rate Schedule FPC Number 25)
31				

Panhandle Eastern Pipe Line Company  
Sales Agreements With Other Gas Companies  
As At June 30, 1941

Line No.	Customer (A)	Territory Served (B)	Agreement or FPC Rate Schedule	
			Date (C)	Term or Expiration (D)
1		<u>Firm Service (Cont.)</u>		
2	Michigan Gas Transmission Corporation	Approximately 40 towns in Indiana	7/31/36	7/31/41 (Rate Schedule FPC Number 16)
3	Detroit, Michigan			
4	Michigan Gas Transmission Corporation	Approximately 30 towns in Indiana	10/ 1/36	10/ 1/51 (Rate Schedule FPC Number 18)
5	Detroit, Michigan			
6	Michigan Gas Transmission Corporation	Industries in a group of towns in Northern and	8/ 1/36	7/31/41 (Rate Schedule FPC Number 17)
7	Detroit, Michigan	Central Indiana		
8	Missouri Edison Company	Louisiana, Missouri	9/20/30	Cancellable 8/30/41 or thereafter on anniversaries. (Rate Schedule FPC Number 38)
9	Louisiana, Missouri			
10				
11	Missouri Power & Light Company	14 towns in Central Missouri	5/19/30	Cancellable 5/6/51 or thereafter on anniversaries. (Rate Schedule FPC Number 28)
12	Jefferson City, Missouri			
13				
14	Missouri Power & Light Company	Part of Excelsior Springs, Missouri	9/28/33	Life of Local well. (Intrastate Sale)
15	Jefferson City, Missouri			
16	Missouri Utilities Company	Columbia, Missouri	3/17/31	Cancellable 7/22/42 or thereafter on anniversaries. (Rate Schedule FPC Number 35)
17	Columbia, Missouri			
18				
19	National Utilities Company of Michigan	Monroe, Dundee, Carleton and Maybee, Michigan	3/ 1/41	Cancellable 12/31/51 or thereafter on anniversaries. (Rate Schedule FPC Number 36)
20	Monroe, Michigan			
21				
22	The Ohio Gas, Light & Coke Company	9 towns in Northwestern Ohio	3/25/39	Cancellable 12/31/51 or thereafter on anniversaries. (Rate Schedule FPC Number 23)
23	Bryan, Ohio			
24				
25	Panhandle Power & Light Company	Gruver, Texas	12/23/30	Cancellable on 90 days' notice. (Intrastate Sale)
26	Borger, Texas			
27				
28	The Toledo Edison Company	Defiance, Ohio	12/22/39	Cancellable 12/31/51 or thereafter on anniversaries. (Rate Schedule FPC Number 26)
29	Toledo, Ohio			
30				

Panhandle Eastern Pipe Line Company  
Sales Agreements With Other Gas Companies  
As At June 30, 1941

Line No.	Customer (A)	Territory Served (B)	Agreement or FPC Rate Schedule	
			Date (C)	Term or Expiration (D)
1		<u>Non-Firm Service</u>		
2		Of the above utilities, the following also purchase gas on an interruptible basis		
3		for certain of their customers under those parts of Panhandle Eastern Pipe Company Term Rate		
4		Schedules known as Rates T-2 and T-3, which purchases may be terminated at any anniversary:		
5		Bowling Green Gas Company, Bowling Green, Missouri		
6		Central Distributing Company, Kansas City, Missouri		
7		Central West Utility Company, Kansas City, Missouri		
8		Citizens Gas Company of Hannibal, Hannibal, Missouri		
9		City of Fulton, Missouri, Fulton, Missouri		
10		Interstate Gas Company, Harrisonville, Missouri		
11		Missouri Edison Company, Louisiana, Missouri		
12		Missouri Power & Light Company, Jefferson City, Missouri		
13		Missouri Utilities Company, Columbia, Missouri		



[fol. 13234]

## Exhibit 60

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Panhandle Eastern Pipe Line Company  
Sales Agreements With Industrial Customers  
As At June 30, 1941

Witness Watkins

Line No.	Customer (A)	Gas Used For (B)	Agreement	
			Date (C)	Term of Expiration (D)
1	Edwards, Conley Brick and Tile Company			
2	Columbia, Missouri	Manufacture of Ceramics	6/30/41	6/30/42
3	Fayette Brick and Tile Company			
4	Fayette, Missouri	Manufacture of Ceramics	6/30/41	6/30/42
5	Freiling Greenhouses			
6	Hannibal, Missouri	Heating Greenhouses	8/21/39	10/31/41
7	Harbison-Walker Refractories Company			
8	Pittsburgh, Pennsylvania	Manufacture of Ceramics	6/30/41	6/30/42
9	Mexico Refractories Company			
10	Mexico, Missouri	Manufacture of Ceramics	6/30/41	6/30/42
11	Missouri Power and Light Company			
12	Jefferson City, Missouri	Fuel for Boilers in producing electric current	10/30/40	10/31/41
13	Phillips Petroleum Company			
14	Bartlesville, Oklahoma	Power at 5 pumping stations	10/31/40	10/31/41
15	The W. J. Small Company			
16	Neodesha, Kansas	Alfalfa Dehydration	3/18/40	4/19/43
17	The W. J. Small Company			
18	Neodesha, Kansas	Alfalfa Dehydration	4/ 2/41	4/29/43
19	State of Kansas			
20	Topeka, Kansas	Fuel for Osawatomie State Hospital	6/ 3/40	
21				Cancellable on 30 days' notice
22	United Brick and Tile Company			
23	Kansas City, Missouri	Manufacture of Ceramics	5/26/33	
24				Cancellable on 30 days' notice
25	Universal Atlas Cement Company			
26	New York, N. Y.	Manufacture of Cement	10/31/40	10/31/41
27	Walsh Refractories Company			
28	St. Louis, Missouri	Manufacture of Ceramics	6/30/41	6/30/42
29	Wellsville Fire Brick Company			
30	Wellsville, Missouri	Manufacture of Ceramics	10/31/40	6/30/42



[fol. 13235]

## Exhibit 60

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Illinois Natural Gas Company  
Sales Agreements With Other Gas Companies  
As At June 30, 1941

Witness Watkins

Line No.	Customer (A)	Territory Served (B)	Agreement or FPC Rate Schedule	
			Date (C)	Term or Expiration (D)
1		<u>Firm Service</u>		
2	Central Illinois Electric and Gas Co.	Lincoln, Illinois	5/24/40	Cancellable 5/26/42 or thereafter
3	Lincoln, Illinois			on anniversaries
4				(Rate Schedule FPC Number 9)
5	Central Illinois Light Company	Bartonville, Pekip, Peoria and Springfield, Illinois	5/13/40	Cancellable 5/26/42 or thereafter
6	Peoria, Illinois			on anniversaries
7				(Rate Schedule FPC Number 4)
8	Central Illinois Light Company	Washington, Illinois	4/10/41	Cancellable 5/30/42 or thereafter
9	Peoria, Illinois			on anniversaries
10				(Supplement No. 1 to Rate Schedule FPC No. 4)
11	Central Illinois Public Service Co.	Canton, Hoopeston, Quincy and Taylorville, Illinois	5/18/40	Cancellable 5/26/42 or thereafter
12	Springfield, Illinois			on anniversaries
13				(Rate Schedule FPC Number 7)
14	Citizens Gas Company	Chrisman, Newman and Tuscola, Illinois	5/9/40	Cancellable 5/26/42 or thereafter
15	Kansas City, Missouri			on anniversaries
16				(Rate Schedule FPC Number 2)
17	Citizens Gas Company	Villa Grove, Illinois	6/7/40	Cancellable 8/4/42 or thereafter
18	Kansas City, Missouri			on anniversaries
19				(Supplement No. 1 to Rate Schedule FPC No. 2)
20	Citizens Gas Company	Arthur and Atwood, Illinois	3/17/41	Cancellable 5/30/42 or thereafter
21	Kansas City, Missouri			on anniversaries
22				(Supplement No. 2 to Rate Schedule FPC No. 2)
23	Illinois Iowa Power Company	Champaign, Urbana, Danville, Decatur and Jacksonville, Illinois	5/15/40	Cancellable 5/26/42 or thereafter
24	Decatur, Illinois			on anniversaries
25				(Rate Schedule FPC Number 5)
26	Illinois Iowa Power Company	Clinton, Illinois	3/26/41	Cancellable 5/30/42 or thereafter
27	Decatur, Illinois			on anniversaries
28				(Supplement No. 1 to Rate Schedule FPC No. 5)
29	Illinois Iowa Power Company	Galesburg, Monmouth, Abingdon and Knoxville, Illinois	4/21/41	Deliveries not commenced nor agree-
30	Decatur, Illinois			ment filed with FPC at 6/30/41

## Illinois Natural Gas Company

Sales Agreements With Other Gas Companies  
As At June 30, 1941

## Agreement or FPC Rate Schedule

Line No.	Customer (A)	Territory Served (B)	Date (C)	Term or Expiration (D)
1		<u>Firm Service (Cont.)</u>		
2	Morton, Village of	Morton, Illinois	1/23/41	Cancellable 1/20/42 or thereafter on anniversaries
3	Morton, Illinois			(Rate Schedule FPC Number 10)
4				
5	Pittsfield, City of	Pittsfield, Illinois	5/13/40	Cancellable 5/26/40 or thereafter on anniversaries
6	Pittsfield, Illinois			(Rate Schedule FPC Number 3)
7				
8	Roodhouse, City of	Roodhouse, Illinois	5/15/40	Cancellable 5/27/42 or thereafter on anniversaries
9	Roodhouse, Illinois			(Rate Schedule FPC Number 6)
10				
11	White Hall, City of	White Hall, Illinois	5/23/40	Cancellable 5/26/42 or thereafter on anniversaries
12	White Hall, Illinois			(Rate Schedule FPC Number 8)
13				

Non-Firm Service

Of the above utilities, the following also purchase gas on an interruptible basis for certain of their customers under those parts of Illinois Natural Gas Company Term Rate Schedules known as rates T-2 and T-3, which purchases may be terminated at any anniversary.

19		Central Illinois Electric and Gas Company	Lincoln, Illinois
20		Central Illinois Light Company	Peoria, Illinois
21		Central Illinois Public Service Company	Springfield, Illinois
22		Citizens Gas Company	Kansas City, Missouri
23		Illinois Iowa Power Company	Decatur, Illinois
24		Morton, Village of	Morton, Illinois

## Illinois Natural Gas Company

Sales Agreements With Industrial Customers  
As At June 30, 1941

## Agreement

Line No.	Customer (A)	Gas Used For. (B)	Date (C)	Term or Expiration (D)
1	Black White Lime Company	Manufacture of Lime	3/1/35	Cancellable 3/1/42 or on anniversaries
2	Quincy, Illinois			
3	Marblehead Lime Company	Manufacture of Lime	5/4/35	Cancellable 5/26/42 or on anniversaries
4	Chicago, Illinois			
5	Marblehead Lime Company	Manufacture of Lime and Rock Wool	1/23/40	12/31/41
6	Chicago, Illinois			
7	Menke Stone and Lime Company	Manufacture of Lime	3/1/35	Cancellable 3/1/42 or on anniversaries
8	Quincy, Illinois			

[fol. 13238]

(Exhibit 61.)

— Current and Future Trends  
In Commodity Prices and Wages  
By David Friday

I have prepared the following report on the probable future course of prices of commodities and of wages in the United States during the year beginning July 1, 1941, and for the period subsequent thereto.

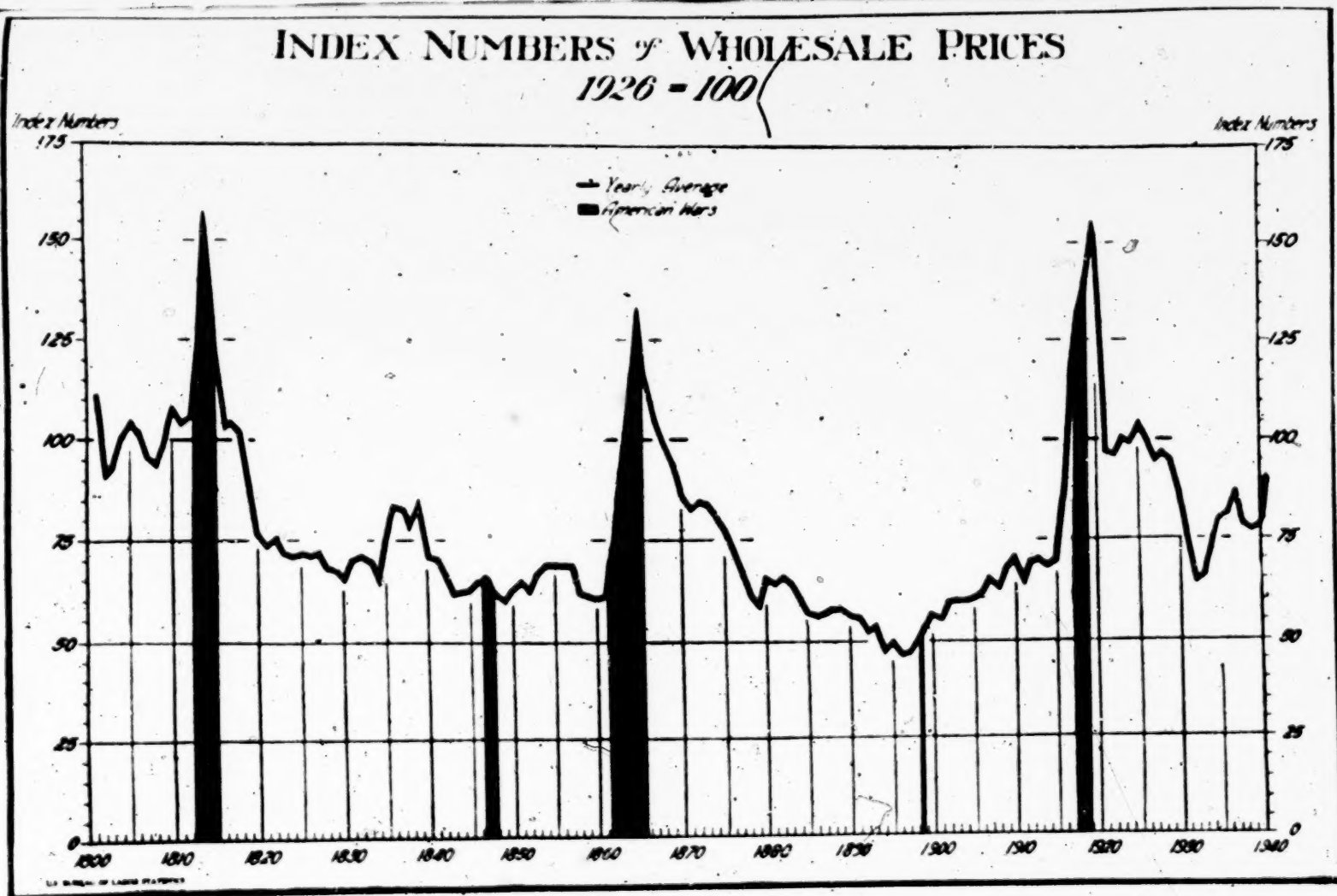
In my opinion the index of wholesale commodity prices, as compiled by the Bureau of Labor Statistics, will be at least 110 by June 30, 1942. That index is based on the prices of 1926 as 100, and stood at 91.2 on September 27, 1941. This means that during the next eleven months, wholesale prices will rise about 20 per cent and reach a level 10 per cent above that which prevailed in 1926.

This upward movement of prices will be dominated by the forces which have been set in motion by the war in Europe, and by the defense program in the United States. The experience derived from the three major wars of the past century indicates clearly what the effect of these forces will naturally be.

Prices and War

Major wars of any prolonged duration have always caused profound disturbances in commodity markets. The terrific strain of war demand on raw-material resources, producing capacity, and manpower, and the interruption of the normal flow of world commerce, and the great expansion of the use of credit have practically always led to spectacular increases in the general level of commodity prices.

[fol. 13239]. Although these effects have naturally been most pronounced in the nations actually at war, they have also extended to all countries buying or selling in world markets. The extent of these disturbances is clearly depicted by the trend of wholesale prices in the United States since the year 1800. Each of the three major American wars—the War of 1812, the Civil War, and the World War—brought a price boom. This is shown in the following chart.



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[fol. 13240] This chart is based on a table of prices published in the Monthly Labor Review of July, 1935. A reprint of that table entitled, "One Hundred Thirty-four Years of Wholesale Prices," was also issued by the United States Bureau of Labor Statistics. The chart has been extended to cover the period to September 1941 by the use of the price statistics of that bureau.

A study of price movements during the last twenty-five months demonstrates that the effect of this present war upon American prices is already fully under way. The Bureau of Labor Statistics Index number of wholesale prices shows that in August, 1939, which was the last month before the outbreak of war in Europe, the level of wholesale commodity prices stood at 75.0. The index had risen to 91.5 in September, 1941. The prices have, therefore, risen 16.5 points or 22 per cent since the outbreak of the war.

This index number of wholesale prices for the years 1913 to date is attached to this report as Exhibit "A". On page 4 of this report is a table showing the index by groups for August, 1939 and for certain intervening months down to date. This table also shows the percent of increase for each group from August, 1939 to September 20, 1941.

[fol. 13241]

Index Numbers Of Wholesale Prices Of Commodities By Groups

(1926 = 100)

Groups	Aug. 1939	Aug. 1940	Dec. 1940	Mar. 1941	Sept. 20 1941	Increase Aug. 1939 to Sept. 20, 1941
All Commodities	75 0	77 4	80 6	81 5	91 5	22 0
Farm Products	61 0	65 6	69 7	71 6	91 2	49 5
Food	67 2	70 1	73 5	75 2	88 5	31 7
Hides	92 7	96 9	102 3	102 6	111 7	20 5
Textile Products	67 8	72 3	74 8	78 4	89 2	31 6
Fuel and Lighting	72 6	71 1	71 7	72 0	80 0	10 2
Metals and Metal Products	93 2	94 9	97 6	97 7	98 7	5 9
Building Materials	82 6	93 3	99 3	99 5	106 2	18 5
Chemicals and Allied Products	74 2	76 7	77 7	79 8	87 8	18 3
House Furnishings	85 6	88 5	88 9	89 5	98 0	14 5
Miscellaneous	73 3	76 7	77 3	77 6	85 0	16 0

Source: United States Department of Labor, Bureau of Labor Statistics.



[fol. 13242] The Bureau of Labor Statistics also compiles an index of prices for twenty-eight basic commodities. This index takes August, 1939 as 100 and is compiled daily for the period since the outbreak of the war. It has risen from 100 in the last month before the outbreak of the war to 151.7 on August 8, 1941.

The table below shows the index of these prices as on several dates from August, 1939 to August 8, 1941 by the five groups into which the Bureau divides them. The smallest rise of any group is 45.0 per cent, and the highest is 60.8. This new index is much more sensitive to changes in market conditions than is the Bureau's monthly index of wholesale prices.

Index Numbers of 28 Basic Commodities

Groups	Aug. 1939	Aug. 15 1940	Dec. 31 1940	Mar. 31 1941	Sept. 30 1941
28 Basic Commodities	100.0	105.6	118.5	135.0	155.7
Import Commodities (11)	100.0	106.1	119.5	144.3	157.6
Domestic Commodities (17)	100.0	105.4	117.9	129.3	154.5
Domestic Agricultural (7)	100.0	111.9	126.4	132.2	162.0
Foodstuffs (12)	100.0	100.8	115.2	134.4	170.8
Raw Industrial (16)	100.0	109.3	121.0	135.4	145.1

The average increase in these basic commodity prices is almost three times as large as the movement in the general index number shown in Exhibit A. This difference is due, in large measure, to the fact that the 883 prices included in the general price index are quoted prices only. The twenty-eight basic commodities are spot prices and many of them are quoted on organized exchanges. In other words, they are actual prices paid. At a time of changing price levels these express the prevailing trend in prices more accurately than mere quoted prices do.

[fol. 13243] If the commodities that go to make up the index of wholesale prices of the Bureau of Labor Statistics had advanced as rapidly in price as did these twenty-eight basic commodities, the general index would now stand at 155.7 times 75.0 or 116.8.

One of the lines of classification within these basic materials is that between imported and domestic commodities.

While all basic commodities had risen from 100 in August, 1939 to 155.7 on September 30, 1941, domestic commodities had gone to 154.5 and imported commodities to 157.6.

This has an important bearing on the possibility of restraining the rise of prices by control. Whatever may be accomplished in this direction in the case of domestic commodities, there is no possibility of avoiding the effect of increased ocean freight rates, or insurance on imported commodities. Their prices must rise to cover these costs. Early in this year the shortage of shipping reached the emergency stage and the price of imported goods rose with this shortage and these costs. From December 31, 1940 to September 30, 1941, imported commodities advanced 38.1 points while domestic rose only 36.6.

It is illuminating to compare price movements at present with those in the World War. After the outbreak of hostilities at the end of August, 1939, the Bureau of Labor Statistics index of wholesale prices rose slightly then fell again. In June, 1940 it had risen only from 75.0 in August, 1939 to 77.5. Many people believed that this action indicated that we would escape a price increase such as we had during the World War. That war broke out on July 28, 1914. In the first two months after that prices rose 4 per cent in this country, but by December, 1914 they fell again to the July level. During the first fifteen months of hostilities in Europe there was practically no further advance in the general level of American commodity prices.

The Bureau of Labor Statistics index of wholesale prices (see Exhibit "A") stood at 67.3 (on the basis of 1926=100) in July, 1914. Prices went to 70.2 in September, 1914, then fell slightly and did not reach 70.2 again until October, 1915, which was fifteen months after the war began. Eight months later, in the twenty-fourth month of the war, i. e., in July, 1916, these prices stood at 83.4 which was 23.9 per cent above July, 1914.

By March, 1917, just before the United States entered the war, prices had risen to 107.7, and by June, 1917 to

122.0. The Bureau of Labor Statistics price index remained near this level until the end of the year, then rose to 136.3 in November, 1918, the month of the armistice. In the post-war boom of 1919 and early 1920, prices reached their peak of 167.2 in May, 1920.

When these prices are stated on a base of July, 1914 as 100, the resulting index shows the rate and extent of advance in prices during the first World War.

Prices In The World War

Date	On basis 1926 = 100	On basis July, 1914 = 100	Month of Warfare
July, 1914	67 3	100 0	1st
Oct. 1915	70 2	104 3	15th
Aug. 1916	85 1	126 4	25th
Mar. 1917	107 7	160 0	32nd
Aug. 1917	124 8	184 0	36th
Nov. 1918	136 3	202 5	52nd
May, 1920	167 2	248 4	(17th) (Post-war Month)

Source: United States Department of Labor, Bureau of Labor Statistics.

[fol. 13245] The present war is now in its twenty-fifth month and the general Bureau of Labor Statistics index of wholesale prices stands at 122.0 per cent of August, 1939, as is shown on page 4. Prices have, therefore, advanced 4.4 per cent less in the first twenty-five months following the outbreak of hostilities in this war. This was due largely to the extraordinary rise which occurred during the World War in the chemical and drug group; and a rise of almost 50 per cent in metals and metal products. In 1914 we were so greatly dependent upon Germany for coal-tar products and other chemicals that the chemicals and drugs group of prices rose from 77.9 in July, 1914 to 166.8 in June, 1916,—an increase of 114.1 per cent, while all prices rose only 23.2 per cent. In this present war period our American chemical industry was prepared to supply our needs in this line with an advance to date of only 13 per cent in prices.

The rise in the price of metals was largely due to the advance in the non-ferrous group, especially copper and

aluminum. In these lines prices were driven up unduly by speculation.

If it had not been for this extraordinary advance in the price of chemicals and metals, the rise would not have been materially larger in the first months of World War I than it has been in the present European war.

After August, 1916 the rise of prices was much more rapid than it had been during the nine months from October, 1915 to August, 1916. In that period the total rise had been 22 per cent of the July, 1914 level.

In the year which followed August, 1916 the rise was 57.6 per cent of the prices in July, 1914. To put it another way, after prices had risen 26 per cent during the first 25 months of war to July, 1916, they rose another 57.6 per cent in the following twelve months. This brought them to 184.0 in August, 1917.

[fol. 13246] Prices made this further rise in the twelve months following August, 1916 after chemicals and metals had already made the great advances which were noted above. As a matter of fact, chemicals were lower throughout this whole twelve month period than they had been in June, 1916. It is my opinion that prices will likewise have a further rise from the level which prevailed on September 20, 1941.

The advance in commodity prices which has resulted from the war in Europe is not limited to the United States, but has occurred in other countries,—both belligerents and non-participants in the war, as is shown by the commodity price indexes of ten countries computed by General Motors and Cornell University.

This index is based on August, 1939 as 100 and is built upon the prices of forty basic commodities, and the list is the same for each country, in so far as possible:

The indexes, which are based on prices expressed in the currency of each country, were reported on May 24, 1941 as follows:

## Commodity Price Indexes Of 10 Countries

(August, 1939 = 100)

1940	Argentina	Australia	Canada	England	Java	Mexico	New Zealand	Sweden	Switzerland	United States
May	120	118	120	143	116	113	112	131	132	112
June	118	118	120	144	116	113	114	131	136	109
July	118	118	120	145	115	112	114	132	140	109
August	118	119	120	150	115	111	120	132	144	109
September	116	120	121	145	116	110	122	135	153	111
October	113	123	122	145	117	110	120	139	158	114
November	113	125	124	146	118	111	118	142	164	118
December	113	126	126	149	120	111	119	144	168	118

1941

January	114	127	126	150	121	111	119	144	171	120
February	114	126	127	150	121	113	119	147	171	120
March	119	122	129	150	123	114	119	154	176	122
July	135	121	141	156	136	125	122	155	194	136
August	138	121	143	156	138	127	123	150		138

Source: Compiled by General Motors Corp. and Cornell University.



[fol. 13248] The reasons for these price advances in war times are to be found in the laws of price and the forces which govern price movements. A study of those laws, and of the forces which are set in motion by war show that it is entirely natural that prices should rise at such times.

The simplest statement concerning the determination of market price is that demand and supply control it. This is the explanation most frequently heard in the market place and on the street. And the statement is true. For as the terms "demand" and "supply" are commonly used, they are taken to include all the forces that influence buyers and sellers. But like most other general explanations, this formula is of little assistance in understanding the actual movements of price until the terms "demand" and "supply" have been exactly defined and until the complex forces which are grouped under these two names have been analyzed.

The first step in the analysis is the definition of demand. The demand for a commodity is the amount of any given good which individuals stand ready to buy at a particular price, during a given time, and at a given place. Demand is the quantity which buyers stand ready to take at some specific price.

A general increase in demand on the part of buyers who have the necessary purchasing power will increase prices. When, for example, business revived during the years 1936 and 1937 and national income increased, as it does in periods of business revival, the result was a rise in the wholesale price index from 79 to 88. This was due to the fact that the increased national income led to a more active demand for commodities. For example, the average weekly earnings of factory workers rose from less than \$22.00 in the first half of 1935 to \$28.00 in the spring of 1937. The national income went from \$56 billions to \$71 billions. This rise translated itself into increased demand and caused commodity prices to rise to 88, which is the [fol. 13249] highest point they had reached since the depression of 1930-1932.

The demand which comes from government during a serious and protracted war is especially potent. This is due, first of all, to the motives which prompt that demand. A nation, in times of war, does not buy with a view to making profit. A private manufacturer purchases raw materials and partly finished commodities if he thinks he can make a profit by fabricating them into a finished product. And he will not pay a price if it is too high to enable him to do this. But governments are not prevented from buying by considerations of profit. Their purchases are made for an entirely different reason. Those reasons are non economic, but exceedingly effective.

When war strikes across the current of a nation's economic life, it produces a complete revaluation of the ends of conduct. Things which before were held in high esteem are now sacrificed ruthlessly and without hesitation to non-economic ends. Even life itself is sacrificed. No one asks that the traditional values which existed before be maintained; they ask only that the war be won, in order that the aims upon which the nation has set its heart can be realized.

This attitude of mind expresses itself in an enormous volume of demand for the things needed to prosecute war. The nation bids for these in great quantities. It would rather buy them cheaply than dearly, but buy them it must. It is this nature of war demand which gives it such great potency to raise prices. The end which the nation has set up for itself is an absolute one. When once war is undertaken, defeat must be prevented at any price. The forces which impel public opinion and dictate official action at such times are to a large degree emotional. If the commodity, or the service, is necessary for victory, it will be bought and paid for even though the price is far above the level which we have come to consider as "normal".

[fol. 13256] There is a second fundamental difference between the demand of government and that of the individual and its effect upon prices. The individual may desire a thing passionately. But if he lacks purchasing power, his demand will be ineffective. It will not influence price.

But the government of a wealthy industrial nation, such as the United States, is not seriously hampered by this problem. Its purchasing power has behind it the taxing power. Not only can it directly take the people's property and income by taxation, but it can pledge their future income for the purpose of borrowing from those who possess the power to buy things but do not choose to exercise it themselves.

Among the institutions which come to the assistance of government at such times are the banks. These institutions not only receive deposits which they may lend, but they also have the unique ability to manufacture purchasing power in the form of credit. They can then lend this credit to their governments and commonly do so at times of war. The banking situation of the United States is such that the power to buy and pay for goods is greater than the entire cost of any war which the United States has yet fought.

What we have then at the moment, is a situation in which the government of this country is making a demand upon our industries which has never been matched before. At the moment, although we are not actually at war, we are in an unlimited emergency and by reason of our defense effort we are getting the same economic results as though we were at war. And there is no doubt about our ability to obtain the purchasing power with which to make the demand of our government effective either at present or even at much higher prices.

A further characteristic of war demand for commodities and services is its immediacy. There is always great pressure for time. Under such conditions it may well be that in the long run prices would naturally be lower—but there is no time to wait for the long run. So it is the short run situation which governs.

[fol 18251] For example, according to figures which have recently become available, the cost of constructing buildings at cantonments represents a large advance over what that cost would have been if it could have been carried

out at the ordinary rate of speed. This is one of the factors that contributes to the rise of prices in the early stages of war activity.

At present there is an ever mounting shortage in shipping. This has been accompanied by a rapidly mounting risk in all shipping operations. As a consequence, the cost of ocean shipping has multiplied greatly and this has increased certain prices.

These features of war demand are largely responsible for the increases in commodity prices which have been set forth in the tables shown earlier. The great increase in demand since war began in Europe has resulted in a large increase in industrial production in mines and manufactures. Their output has risen from 104 in August 1939 to 161 in August, 1941, according to the Federal Reserve Board index of physical volume of production. This index is based upon the average of the years 1935 to 1939 as 100. Factory payrolls rose from 91.2 in August 1939 to 152.5 in July, 1941. The national income for 1940, as computed by the Department of Commerce of the United States, was \$76 billions. This is larger than it has been in any year since 1929, when it amounted to \$82,885 millions. In 1941 it will exceed 1929 and will approach \$90 billions.

This increase in productive activity and the rise of payrolls which accompanies it is, in turn, one of the causes which will bring about a further rise in prices. For it constitutes economic power in the hands of the workers who receive it and this swells the volume of new purchasing power that is offered on the market for commodities.

Under these conditions the only forces which can stop the rise in prices must operate on the supply side. Prices will not stay at their old level when demand increases unless [fol. 43252] additional goods can be produced so cheaply that they will continue to be offered at the old prices. Clearly, this will only happen if the cost of producing them is low enough so that they can continue to be sold at a profit at the former price. They will not be produced unless price is high enough to cover cost, including a profit.

The supply of goods will not be increased or even maintained unless this is the case.

There is no likelihood that costs of production will fall during the present war, nor for some years thereafter.

The principal items in the cost of manufactures are wages, taxes, and the maintenance and support of capital. The largest item or expense to the individual manufacturer is for materials. But the prices of these in turn resolve themselves into the costs of producing those materials. So for all manufactures, taken as a whole, the items of cost set forth above dominate prices.

The largest element in this cost is wages and salaries for they represent more than 75 per cent of the entire cost of converting materials into finished product. During 1940 the total contribution to the national income which originated in manufacturing amounted to \$19,168 millions; and the wages and salaries paid by that industry were \$15,218 millions or 80 per cent (Survey of Current Business, June 1941). There is no likelihood that these labor costs will increase.

The effect of war on wages is illustrated by what happened during the World War. When the war broke out in August, 1914, the weekly average earnings in New York State factories were \$12.53. By September, 1915 they were \$12.86, and by June, 1916 they had advanced to \$14.40. By June, 1917 weekly wages in these factories had risen to \$16.20. This was an increase of \$3.24 or 25 per cent over September, 1915.

By November, 1918, when the armistice was declared, wages had risen \$5.40 further to \$21.60. This was an increase of 33½ per cent over June, 1917. And it was a total [fol. 13253] rise of 72 per cent above the level of August 1914.

We are using these figures for New York State for the wages of factory workers because there are no figures of



wages of factory workers available on a national scale for the period 1914 to 1920.

These figures were compiled and published by the New York State Department of Labor and are printed in its monthly publication, "The Industrial Bulletin," vol. 20, No. 1, January, 1941, page 19.

It is interesting to note several other facts about these weekly earnings. In the depression of 1921-1922, these wages never fell below \$24.15 per week. From that point they rose to a high of \$30.35 in March, 1929. In the depression of the 1930's they declined to a low of \$20.73 in March, 1933; and by December, 1940 they had risen again to \$30.01. In July, 1941 they were at \$34.29, which is a new high for all time.

The chart (Exhibit B) which I prepared from these figures, shows the movement in these wages graphically. This graph is not an index number, but represents actual dollars earned per week, as is shown by the figures on the sides of the graph.

Wages did not stop rising with the armistice, but continued their advance in the post-war boom of 1919 and 1920 and finally reached \$28.93 in October, 1920.

The general pattern of wage movements in the first World War, revealed by the graph (Exhibit B), may be summarized as follows:

There was, first of all, a period in which earnings were almost stationary. This lasted for a year and one-half after August, 1914. The average weekly earnings for 1915 were only 49 cents higher than in the last six months of 1914. In 1916 they recorded an advance of 12 per cent over 1915. In 1917 there was a 13.5 advance over 1916. Then in 1918 the increase rose to 24 per cent.

The absolute rise in average weekly wages in each of [fol. 13254] these periods was as follows:

1914 to 1915	\$0.40
1915 to 1916	1.58
1916 to 1917	1.94
1917 to 1918	3.98
(1914 to 1918)	<hr/> \$7.90
1918 to 1919	\$3.15
1919 to 1920	4.65
(1918 to 1920)	<hr/> \$7.80
1914 to 1920	<hr/> \$15.70

These figures show strikingly how rapidly wages rose in the post-war inflationary period. The rise from 1914 to 1918 was 62 per cent; and the advance from 1918 to 1920 was as great as that of the war period.

In the present war, weekly earnings in New York State factories have increased 24.6 per cent in the twenty-three month period between August, 1939 and July, 1941. This exceeds their increase in the first twenty-three months of the first World War, in which period the increase was only 13 per cent. In the year which followed the first twenty-three months of the World War weekly earnings went up another 14.6 per cent. If such a rise occurs, it will put weekly earnings at \$39.29 by July of next year. This would be \$9.11 higher than they were in August, 1939, and will bring them 43 per cent above August, 1939 earnings.

A part of the rise which has already occurred since August, 1939 has been due to an increase in the number of hours worked. But there has also been an increase in hourly rates. In twenty-five manufacturing industries reported by the National Industrial Conference Board earnings per hour had increased 14 per cent over August, 1939 by July, 1941. The course of hourly earnings is shown in Exhibit C.

[fol. 13255] These hourly earnings, collected and compiled from twenty-five manufacturing industries by the

Conference Board are not from a single state, as were the New York State figures previously presented, but are nationwide.

I expect that these hourly earnings will increase more rapidly from now on, much as they did in the last war, after the spring of 1916, so that they will be up at least 20 per cent from the level of August, 1939 by a year from now.

The forces which are at present making for higher wages are clear and striking.

(1) First and foremost is the fact of improved business. The index of industrial production stood at 156 for June, 1941. That is the highest level on record; and it is still expanding and business activity will grow more intense. This is going to be accompanied by a tight labor market. There is abundant evidence of this on every hand. The draft is withdrawing certain types of labor that compete in the labor market. This will make certain classes of labor harder to get. In fact, the draft is simply a complete new area of demand added to the labor field, and its effect in reducing supply will exert an upward pressure on wages.

(2) A second factor operating to increase wages is new in this country, as compared with previous war periods. This factor is organized labor, one of whose principal functions is to raise the rate of wages. This agency is much more powerful now than in the last war, or in any previous period of great business prosperity. In the five years which elapsed between June, 1936 and June, 1941, wages in New York State factories have risen \$5.38, or 33.4 per cent. The labor union has a clearer notion of what it wants and how to get it than it ever had before. The events of recent months illustrate this anew.

The Exhibit illustrates what labor accomplished in the prosperity period of 1935 and 1937. Short as that period was, average hourly earnings rose 20 per cent during these three years. This was after they had already risen early in 1935, to the levels which prevailed in 1929.

{fol. 13256} Not only did they have an astounding rise in the late months of 1936 and the first half of 1937, but they were maintained at this new level during the subse-

quent depression of late 1937 and 1938. In 1940 they started on a new rise which has been accelerated in 1941.

This rise will unquestionably continue, for all the forces which were at work in the field of wages in 1935 to 1937 are present in greatly accelerated form at this time.

One of the forces which has raised prices sensationally is the policy of our government to give the farmer a larger share in the national income by increasing the prices of his products through government assistance. Since the farmer does not labor for wages but sells the products which he grows on his farm, the only way of giving him more is by raising the prices of his products.

There is no doubt about the policy which will be followed in the field of farm prices. On May 26, 1941, the President signed legislation providing mandatory loans of 85 per cent of parity on five basic farm crops.

The President's statement at the time he signed the measure sets forth the purpose of this legislation:

"This is an effort to obtain farm prices which are nearer parity. It reflects the Government's objective of the last eight years. It reflects the fact that the farmers did not have and have not as great a share of the national income as other groups."

The Department of Agriculture estimated that food costs to consumers will be increased 10 per cent to 20 per cent.

The results of this action have been prompt and effective. When the drive for farm price parity started early in March of this year, the "foodstuffs" group in the price index for 28 basic commodities, which is based on August, 1939 as 100, stood at 120.2. By October 1, it had risen to 171.1. Cotton was at 118.4 per cent of its August 1939 price, and has risen to 160 per cent.

[fol. 13257] In the hearings on price control before the House Bank and Currency Committee proposals have been made to put a ceiling for farm products at 110 per cent of parity, and also to put a floor under some of the agricultural prices.

This, of course, raises the cost of living and so prompts the industrial worker to make new demands for higher wages. This results in higher production costs and a new increase in prices of manufactured products. This rise in prices of other products calls for a new increase in farm prices to bring them to parity, and the whole circle starts again.

### Taxes and Prices.

One element in costs of production has not been considered: That costs is taxes. On the following page is a table showing the "Tax Collections in the United States," from 1913 to 1940, and an estimate for 1941 and 1942 on the assumption that the European war continues that long.

This Exhibit shows the enormous increase in taxes which took place in the World War and which is confronting us now. Taxes increased less than \$1,000,000,000 (from \$2,189,000,000 to \$3,158,000,000) between 1913 and our entrance into the war in 1917. Of this increase only a little over one-third was in Federal taxes. In the three years after we entered the war taxes rose \$6,000,000,000.

[fol. 43258]

#### Tax Collections In The United States

1913 - 1942

(In Millions of Dollars)

Year June 30	Total Federal State and Local Tax Collections	National Income	Percent of Taxes to Nat'l Income
1913	\$2,189	\$31,450	6.96
1914	2,383	31,213	7.63
1915	2,487	32,533	7.61
1916	2,661	38,739	6.87
1917	3,158	46,376	6.81
1918	5,675	56,956	9.96
1919	7,423	62,945	11.79
1920	9,204	68,434	13.54
1921	8,800	56,689	15.52
1922	7,502	57,171	13.12
1923	7,234	65,662	11.02
1924	7,812	67,003	11.66
1925	7,884	70,051	11.25
1926	8,905	73,523	11.70
1927	9,059	73,966	12.25
1928	9,342	75,904	12.31



1929	9,759	79,498	12 28
1930	10,266	72,398	14 18
1931	9,300	60,203	15 45
1932	8,147	46,708	17 44
1933	7,501	44,713	16 77
1934	8,773	51,560	17 01
1935	9,731	56,254	17 30
1936	10,507	65,246	16 10
1937	12,473	69,419	17 97
1938	14,302	62,286	22 96
1939	13,850	69,400	19 96
1940	14,300	76,000	18 82
1941*	16,000	80,000	20 00
1942*	22,500	90,000	25 00

Note: \*Estimated.

Source: National Industrial Conference Board.

[fol. 13259] The peak of taxes came in the fiscal year 1920 with collections of \$9,204,000,000.

Neither Federal nor State and local tax ever reached as much as \$2,000,000,000 in the years which followed 1920. Even in the low year of 1923 taxes only fell to \$7,234,000,000. By 1930 they had reached more than \$10,000,000,000, and by 1938 they had grown to \$14,320,000,000 which is already \$5,000,000,000 higher than the taxes of the peak year of World War I period.

The present indications are that the collections for the calendar year 1942 will be \$22,500,000,000. This will be an increase of \$8,500,000,000 over 1940, and will be about 25 per cent of the whole national income. This increase will certainly help to raise prices. In fact, a higher price level will be necessary to sustain a tax burden of this magnitude.

In view of all these factors, my opinion that the price level will be at or above 110 by June 30, 1942 is conservative, and is in line with the President's clear and emphatic statement of his viewpoint in his address of October 22, 1933, when he said:

"I do not hesitate to say, in the simplest, clearest language of which I am capable, that, although the prices of many products of the farm have gone up and although many farm families are better off than they were last year, I am not satisfied either with the amount or the extent of the rise, and that it is definitely a part of our policy to increase the rise and to extend it to those products

which have as yet felt no benefit. If we cannot do this one way, we will do it another. Do it we will \* \* \*

\* Finally, I repeat what I have said on many occasions, that ever since last March the definite policy of the Government has been to restore commodity price levels. The object has been the attainment of such a level as will enable agriculture and industry once more to give work to the unemployed."

In arriving at my opinion, I have taken cognizance of the fact that attempts are being made to control these prices and to insure that they shall rise in an orderly manner.

[Feb. 13, 1920] In my opinion, the price level will be kept from rising above 110 within the next year only, because of these activities of the Government. Without these efforts to restrain runaway markets, prices would, in my opinion, rise higher than has been here indicated.

It must be kept in mind that a return to a price level of 100 is merely what has been considered normal and desirable, and is no ground for fear of inflation, which would be the ground for drastic restraint by the Government.

If the war in Europe continues beyond 1942, prices will rise above 110 on the Bureau of Labor Statistics index. How much they will rise will depend on our national policy with respect to the price of farm products, and to wages in industry, trade, and transportation. It is practically certain that taxes will continue to rise.

In my opinion, the rise of prices will be somewhat restrained by Government interference, as it was from June, 1917 to November, 1918. The total rise from the outbreak of World War I to the armistice, in November, 1918, was 102.5 per cent.

After the close of the war, it is my opinion that prices will rise as they did after the last war. By May, 1920 the Bureau of Labor Statistics price level was 22 per cent above November, 1918; and it was 148 per cent above August, 1914.

The more the purchase of goods is restrained by priorities during the continuation of hostilities, the greater will

be the demand for them after the war ends. If the plan for selling bonds to the great mass of the people succeeds, as it did during our participation in World War I, then the people who want these goods will get the purchasing power to buy them by selling their bonds as they did during 1919 and 1920. This demand will raise prices to higher levels.

[fol. 13261] If the war lasts to the end of 1943 the price level will certainly reach 150. It stood at 75 in August, 1939. In 1920 the price level rose to 167. The price level had been 67 in July, 1914. Prices did not recede to 67 in the depression of 1921-22. The lowest they got was 91.4 in January, 1922. They revived quickly and rose to 100.7 by the end of the year. This was practically 50 per cent above the pre-war level of 1914. They remained at that level throughout 1926. That year was finally adopted as 100 by the Bureau of Labor Statistics because prices seemed to have stabilized at about the level of that year.

There was a general belief in 1920 that prices would fall to the pre-war level as a result of the post-war readjustment. But nothing of the sort happened, as has just been shown above. The keys to this resistance of the price level to the post-war forces of price depression are the cost of living and the level of hourly wages. In the world war the costs of living followed the rise of prices but with some lag. It reached its peak in June, 1920 when it stood at 211 per cent of 1913, and at 206 of December, 1914.

Prices reached their high point at about the same time as the cost of living. But they stood at about 240 per cent of the 1913-14 level. But when prices fell from the high level to its low level of 91.4, the Bureau of Labor Statistics index of cost of living never fell below 118.7. Thus, the price level fell to 55 per cent of the peak of May 1920 and then leveled out at 60 per cent of that high point.

As contrasted with that drop, the lowest point to which the costs of living fell was 80 per cent of the peak, and it levelled out at 82 per cent. This was 70 per cent above the level during 1913-1914.

This comparison may be summarized by the statement that while prices settled down at 150 per cent of the pre-

war World War I level the cost of living remained at 170 per cent.

[fol. 13262] The course of wages has been discussed above, and it is shown graphically in Exhibits "B" and "C". That discussion shows that actual Hourly Earnings in Manufacturing never fell lower, even in 1921, than twice those of 1914. By 1929 they had risen to 240 per cent of 1914. Actual weekly earnings in 1921 were 187 per cent of 1914. In 1929 these had risen to 225 per cent of 1914.

In preparing the index number showing changes in the cost of living the Bureau of Labor Statistics uses the years 1935 to 1939 as 100. I have prepared a chart which shows the course of the cost of living in cities in the United States from 1913 to the present. On the same chart is shown the course of wholesale prices for the same years. This has been made from the Bureau of Labor Statistics' index of wholesale prices also converted to a 1935 to 1939 base.

The graph marked Chart "D" shows that the great advance in prices from 1915 to 1920 raised the cost of living. But the subsequent decline in prices did not depress the cost of living in the same degree. From 1921 to 1939 the two had variations which were in close correspondence. Prices were the most volatile of the two, and in the depression period of 1931 to 1935 prices overcame the inertia of the cost of living and pulled it down.

But upon the whole it is a factor which has the effect of sustaining wages and so maintaining costs at a level which serves as a floor for prices.

At the present time prices have again risen above the costs of living and wages are rising rapidly. In my opinion this will again produce a level in the cost of living which will sustain wages and the price of products above the level of August, 1939, and above the prices which now prevail. It is my opinion that if the general Bureau of Labor Statistics price index goes to 150 after the close of the war prices will stabilize at about 120 after the period of post-war readjustment.



(3135)

U.S. Department of Labor  
BUREAU OF LABOR STATISTICS  
Washington

INDEX NUMBERS OF WHOLESALE PRICES OF ALL COMMODITIES  
BY MONTHS, 1890 TO 1940  
(1926 = 100)

Years :	Jan.:	Feb.:	Mar.:	Apr.:	May :	June:	July:	Aug.:	Sept.:	Oct.:	Nov.:	Dec.:	Year
1890 :	54.7:	54.8:	55.0:	55.1:	55.6:	55.4:	55.7:	57.8:	58.4 :	58.1:	57.1:	56.6:	56.2
1891 :	56.1:	56.6:	57.8:	58.2:	57.5:	55.8:	55.5:	55.4:	54.8 :	54.6:	54.3:	53.8:	55.8
1892 :	52.7:	52.4:	51.6:	50.5:	50.8:	50.7:	51.9:	52.4:	52.5 :	53.0:	54.0:	55.0:	52.2
1893 :	56.6:	57.2:	56.2:	55.6:	55.0:	53.2:	51.9:	50.3:	52.0 :	52.9:	51.2:	50.4:	53.4
1894 :	49.6:	48.6:	47.5:	47.3:	47.0:	47.2:	47.5:	48.3:	49.6 :	48.2:	47.9:	47.5:	47.9
1895 :	47.2:	46.9:	47.2:	49.6:	50.1:	50.4:	50.0:	49.5:	49.0 :	49.4:	49.0:	48.3:	48.8
1896 :	48.0:	47.5:	46.9:	46.7:	46.0:	45.5:	45.1:	45.1:	45.3 :	46.6:	48.1:	47.6:	46.5
1897 :	46.7:	46.3:	46.3:	45.8:	45.5:	45.0:	45.3:	47.1:	48.5 :	48.1:	47.9:	48.1:	46.6
1898 :	48.0:	48.6:	48.8:	48.9:	51.8:	48.3:	48.0:	48.0:	47.8 :	47.7:	48.0:	48.3:	48.5
1899 :	48.9:	49.7:	49.8:	50.6:	50.7:	51.3:	51.9:	53.0:	54.6 :	55.4:	55.8:	56.7:	52.2
1900 :	57.0:	57.3:	57.3:	57.2:	56.1:	55.5:	55.3:	55.7:	56.1 :	55.3:	55.4:	55.1:	56.1
1901 :	55.2:	54.7:	54.5:	54.4:	54.1:	54.1:	54.5:	55.4:	56.1 :	56.1:	56.6:	57.7:	55.2
1902 :	56.8:	56.7:	56.5:	57.4:	58.3:	58.8:	59.1:	58.0:	58.7 :	63.2:	60.7:	61.5:	53.9
1903 :	62.6:	62.0:	60.3:	60.0:	59.0:	59.0:	58.6:	58.8:	59.5 :	58.7:	58.3:	58.7:	59.6
1904 :	59.7:	60.7:	60.5:	59.3:	58.5:	58.4:	58.5:	59.2:	59.3 :	59.9:	60.7:	61.1:	59.7
1905 :	60.6:	61.0:	60.3:	60.4:	59.3:	59.3:	59.4:	60.1:	59.6 :	59.9:	60.1:	61.1:	60.1
1906 :	61.1:	60.8:	60.6:	61.1:	61.3:	61.3:	59.7:	61.2:	61.7 :	62.8:	63.6:	64.3:	61.3
1907 :	64.0:	64.9:	64.3:	64.5:	65.0:	66.1:	66.1:	66.1:	66.5 :	66.9:	64.6:	63.2:	65.2
1908 :	62.3:	61.4:	61.8:	62.2:	62.2:	62.6:	63.1:	63.0:	63.3 :	63.5:	64.1:	64.8:	62.9
1909 :	64.6:	64.9:	65.2:	66.2:	67.3:	67.3:	67.9:	68.2:	68.9 :	70.2:	70.9:	71.6:	67.6
1910 :	71.4:	71.3:	71.9:	73.2:	72.0:	71.0:	71.0:	70.8:	69.9 :	67.9:	66.4:	66.6:	70.4
1911 :	66.1:	64.4:	64.7:	63.3:	63.0:	63.0:	63.9:	65.5:	66.1 :	66.2:	65.9:	65.3:	64.9
1912 :	66.0:	66.7:	67.5:	69.7:	70.0:	69.0:	68.9:	69.7:	70.5 :	70.3:	70.2:	70.1:	69.1
1913 :	70.3:	69.3:	69.9:	69.7:	68.9:	69.0:	69.5:	69.7:	70.6 :	70.4:	70.1:	69.1:	69.8
1914 :	68.6:	68.3:	68.0:	67.0:	67.4:	67.4:	67.3:	69.6:	70.2 :	68.0:	67.5:	67.3:	68.1
1915 :	68.1:	68.0:	68.2:	68.7:	69.0:	68.3:	69.3:	68.6:	68.7 :	70.2:	71.7:	74.0:	69.5
1916 :	77.0:	78.5:	80.4:	81.7:	82.5:	82.2:	83.4:	85.1:	86.9 :	91.1:	97.4:	99.2:	85.5
1917 :	102.1:	104.5:	107.7:	114.1:	120.7:	122.0:	123.0:	124.3:	123.5 :	122.2:	122.8:	122.9:	117.5
1918 :	125.0:	122.7:	126.4:	128.3:	128.1:	129.0:	130.0:	131.3:	137.5 :	136.3:	136.3:	136.3:	131.3
1919 :	134.4:	129.8:	131.3:	132.0:	135.3:	135.0:	141.1:	144.3:	141.1 :	141.6:	144.5:	150.5:	138.6
1920 :	157.7:	157.1:	158.0:	165.5:	167.2:	166.5:	165.8:	161.4:	155.2 :	154.2:	133.4:	120.7:	154.4
1921 :	114.0:	104.9:	102.4:	98.9:	90.2:	92.4:	92.4:	93.5:	92.4 :	94.1:	94.2:	92.9:	97.6
1922 :	91.4:	92.9:	92.8:	93.2:	90.1:	90.3:	99.4:	98.6:	99.3 :	99.6:	100.5:	100.7:	96.7
1923 :	102.0:	103.3:	104.5:	105.9:	101.9:	100.3:	98.4:	97.3:	99.7 :	99.4:	98.4:	98.1:	100.6
1924 :	99.6:	99.7:	98.5:	97.3:	95.9:	94.9:	95.0:	97.3:	97.1 :	98.2:	99.1:	101.5:	98.1
1925 :	102.9:	104.0:	104.2:	101.9:	101.0:	103.0:	104.3:	103.9:	103.4 :	103.6:	104.0:	105.4:	103.5
1926 :	103.2:	102.0:	100.6:	100.5:	100.5:	100.4:	99.5:	99.1:	99.7 :	99.4:	98.4:	97.9:	100.0
1927 :	96.5:	95.8:	94.7:	94.1:	94.2:	94.1:	94.3:	95.2:	96.3 :	96.6:	96.3:	96.4:	95.4
1928 :	96.4:	95.8:	95.5:	96.6:	97.5:	96.7:	97.4:	97.6:	98.5 :	96.7:	95.8:	95.8:	96.7
1929 :	95.9:	95.4:	96.1:	95.5:	94.7:	95.2:	96.5:	96.3:	96.1 :	95.1:	93.5:	93.3:	95.3
1930 :	92.5:	91.4:	90.2:	90.0:	88.8:	86.8:	84.4:	84.3:	84.4 :	83.0:	81.3:	79.6:	86.4
1931 :	78.2:	76.8:	76.0:	74.8:	73.2:	72.1:	72.0:	72.1:	71.2 :	70.3:	70.2:	68.4:	73.0
1932 :	67.3:	66.3:	66.0:	65.5:	64.4:	63.9:	64.5:	65.2:	65.3 :	64.4:	63.9:	62.6:	64.8
1933 :	61.0:	59.8:	60.2:	60.4:	62.7:	65.0:	68.9:	69.5:	70.8 :	71.2:	71.1:	70.8:	65.9
1934 :	72.2:	73.6:	73.7:	73.3:	73.7:	74.6:	74.8:	76.4:	77.6 :	76.5:	76.5:	76.9:	74.9
1935 :	78.8:	79.5:	79.4:	80.1:	80.2:	79.3:	79.4:	80.5:	80.7 :	80.5:	80.6:	80.9:	80.0
1936 :	80.6:	80.6:	79.6:	79.7:	78.6:	79.2:	80.5:	81.6:	81.6 :	81.5:	82.4:	84.2:	80.2
1937 :	85.9:	86.3:	87.8:	88.0:	87.4:	87.2:	87.9:	87.5:	87.4 :	85.4:	83.3:	81.7:	86.3
1938 :	80.9:	79.8:	79.7:	78.7:	78.1:	78.3:	78.8:	78.1:	78.3 :	77.6:	77.3:	77.0:	76.6
1939 :	76.9:	75.9:	76.7:	76.2:	76.3:	75.6:	75.4:	75.0:	73.1 :	79.4:	79.2:	79.2:	77.1
1940 :	79.4:	78.7:	78.4:	79.6:	78.4:	77.5:	77.7:	77.4:	78.0 :	78.7:	79.6:	80.0:	78.6
1941 :	80.8:	80.6:	81.6:	83.2:	84.9:	87.1:	88.8:	90.3:					



[fol. 13264] For Immediate Release  
September 25, 1941  
(12729)

U. S. Department of Labor  
Bureau Of Labor Statistics  
Washington

Wholesale Prices For Week Ended September 20, 1941.

The reaction in agricultural markets brought the Bureau of Labor Statistics' index of wholesale prices of nearly 900 series down slightly by 0.1 percent during the week ended September 20, Acting Commissioner Hinrichs reported today (Thursday). "At 91.5 percent of the 1926 average, the general level of commodity prices in wholesale markets is 1.7 percent higher than last month and 17.8 percent above a year ago," Mr. Hinrichs said.

Average wholesale prices for farm products dropped 0.4 percent and food prices 0.7 percent during the week. Both groups are substantially higher than in 1940—farm products by 39 percent and food prices by 24½ percent. Prices for all grains, except barley, fell sharply and quotations were also lower for cotton, eggs, onions, and potatoes. Weakening prices for steers and lambs brought the average for livestock and poultry down 0.3 percent. Meats declined 2.1 percent. Quotations were also lower for fresh beef at New York, and fresh pork and lamb. Higher prices were reported for calves, live and dressed poultry, cured pork, and for hay, tobacco, and wool. There were further advances for butter, cheese, most canned and dried fruits, sweet potatoes, coffee, oleo oil, edible tallow, and refined soy bean oil.

Textile products and chemicals and allied products continued to rise, both advancing by 0.6 percent during the week. Quotations were higher for cotton goods such as denim, ticking, tire fabrics, and cotton yarn, and for rayon yarns, and raw jute. Sharp increases occurred in prices for certain industrial chemicals, including denatured alcohol, salt cake, zinc chloride, phosphates, synthetic camphor, and for fats and oils.

Hides rose ~~more~~ than 3 percent and prices for leather, shoes and luggage also advanced. Coal and petroleum products continued to rise.

The lumber index rose 0.9 percent because of higher quotations for most types of Douglas fir and for yellow pine drop siding, and timbers. Maple and oak flooring declined and lower prices were also reported for yellow pine boards, finish and flooring. Turpentine declined 4.4 percent during the week, while linseed oil advanced.

The following tables show (1) index numbers for the principal groups of commodities for the past 3 weeks, for August 23, 1941 and for September 21, 1940 and the percentage changes from a week ago, a month ago, and a year ago (2) percentage changes in subgroup indexes from September 13 to September 20, 1941.

(12729)

WHOLESALE PRICES FOR WEEK ENDING SEPTEMBER 20, 1941  
(1926 = 100)

Commodity groups	Percentage changes to							
	Sept.: 20 1941	Sept.: 13 1941	Sept.: 6 1941	Aug.: 23 1941	Sept.: 21 1940	Sept.: 13 1941	Aug.: 23 1941	Sept.: 21 1940
ALL COMMODITIES.....	91.5	91.6	91.0	90.0	77.7	- 0.1	+ 1.7	+17.8
Farm products.....	91.2	91.6	89.1	86.7	65.7	- 0.4	+ 5.2	+38.8
Foods.....	90.5	89.1	88.6	87.0	71.1	- 0.7	+ 1.7	+24.5
Hides and leather products...	111.7	111.4	111.2	110.8	99.0	+ 0.3	+ 0.8	+12.8
Textile products.....	89.2	88.7	88.3	87.3	72.0	+ 0.6	+ 2.2	+23.9
Fuel and lighting materials..	80.0	80.0	79.9	79.8	71.9	0	+ 0.3	+11.3
Metals and metal products....	99.7	99.7	99.7	98.6	85.3	0	+ 0.1	+ 3.6
Building materials.....	106.2	105.9	106.0	105.2	95.2	+ 0.3	+ 1.0	+11.6
Chemicals & allied products..	87.8	87.3	86.0	85.9	76.6	+ 0.6	+ 2.2	+14.3
Housefurnishing goods.....	98.0	97.9	97.1	96.8	90.0	+ 0.1	+ 1.2	+ 8.9
Miscellaneous commodities....	85.0	84.9	84.5	83.6	76.3	+ 0.1	+ 1.7	+11.4
Raw materials.....	89.8	90.0	88.5	86.9	70.1	+ 0.2	+ 3.3	+28.1
Semimanufactured articles....	90.1	89.9	90.0	89.4	77.5	+ 0.2	+ 0.8	+16.3
Manufactured products.....	92.8	93.0	92.6	91.8	81.7	- 0.2	+ 1.1	+13.6
All commodities other than farm products.....	91.6	91.7	91.4	90.7	80.4	- 0.1	+ 1.0	+13.9
All commodities other than farm products and foods...	91.8	91.6	91.4	90.9	82.5	+ 0.2	+ 1.0	+11.3

PERCENTAGE CHANGES IN SUBGROUP INDEXES FROM  
SEPTEMBER 13 to SEPTEMBER 20, 1941

Increases

Oils and fats.....	2.2
Rayon.....	2.0
Fruits and vegetables.....	1.4
Anthracite.....	1.1
Lumber.....	0.9
Fertilizer materials.....	0.7
Cotton goods.....	0.7
Other miscellaneous.....	0.6
Hides and skins.....	0.5
Leather.....	0.5
Other leather products.....	0.5

Clothing.....	0.3
Brick and tile.....	0.3
Chemicals.....	0.3
Shoes.....	0.2
Woolen and worsted goods...	0.2
Petroleum products.....	0.2
Drugs & pharmaceuticals...	0.2
Other textile products.....	0.1
Bituminous coal.....	0.1
Furnishings.....	0.1
Furniture.....	0.1

Decreases

Grains.....	2.3
Meats.....	2.1
Cattle feed.....	1.3

Other foods.....	0.8
Livestock and poultry.....	0.3
Cereal products.....	0.2

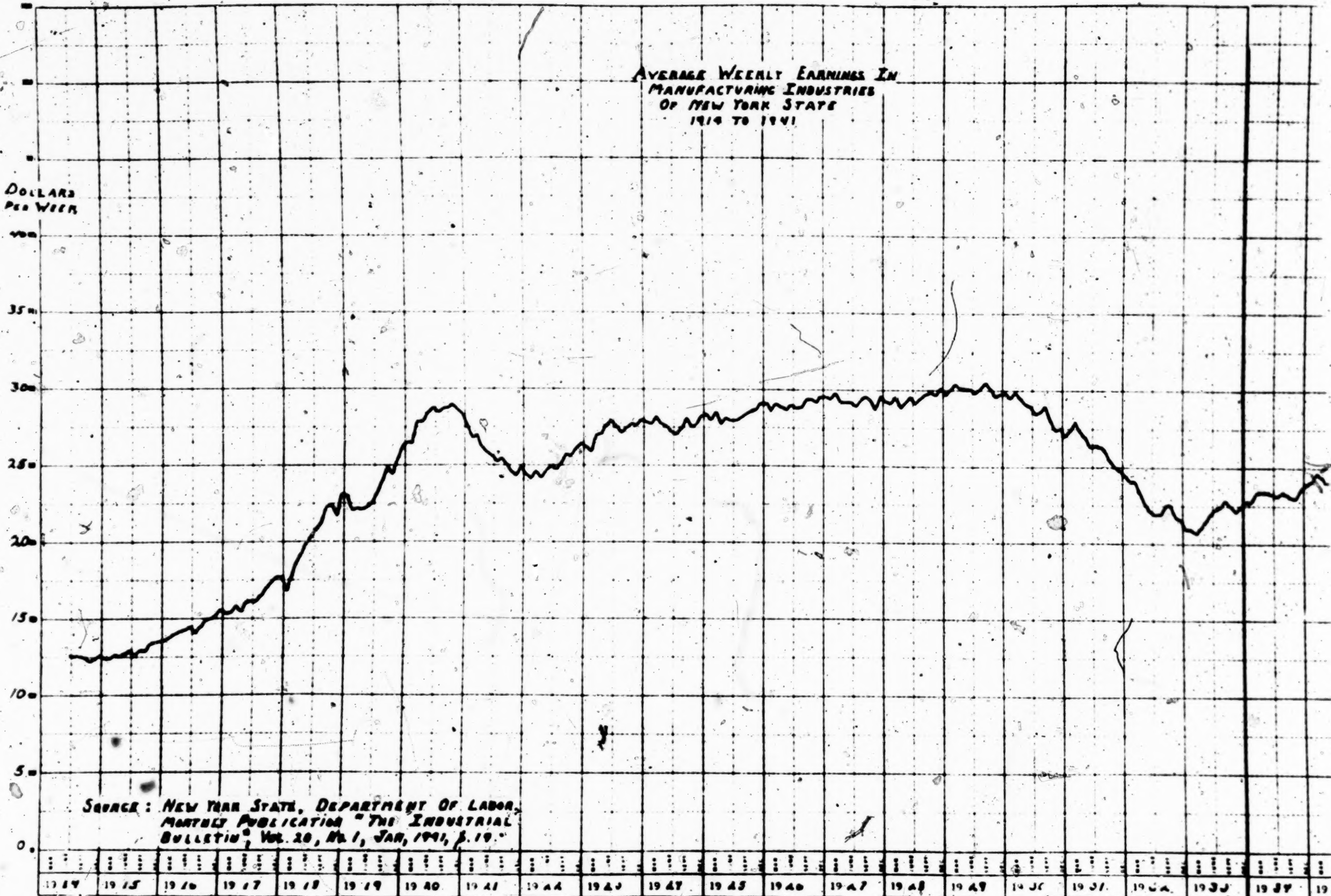
**AVERAGE WEEKLY EARNINGS IN  
MANUFACTURING INDUSTRIES  
OF NEW YORK STATE  
1914 TO 1941**

**DOLLARS  
PER WEEK**

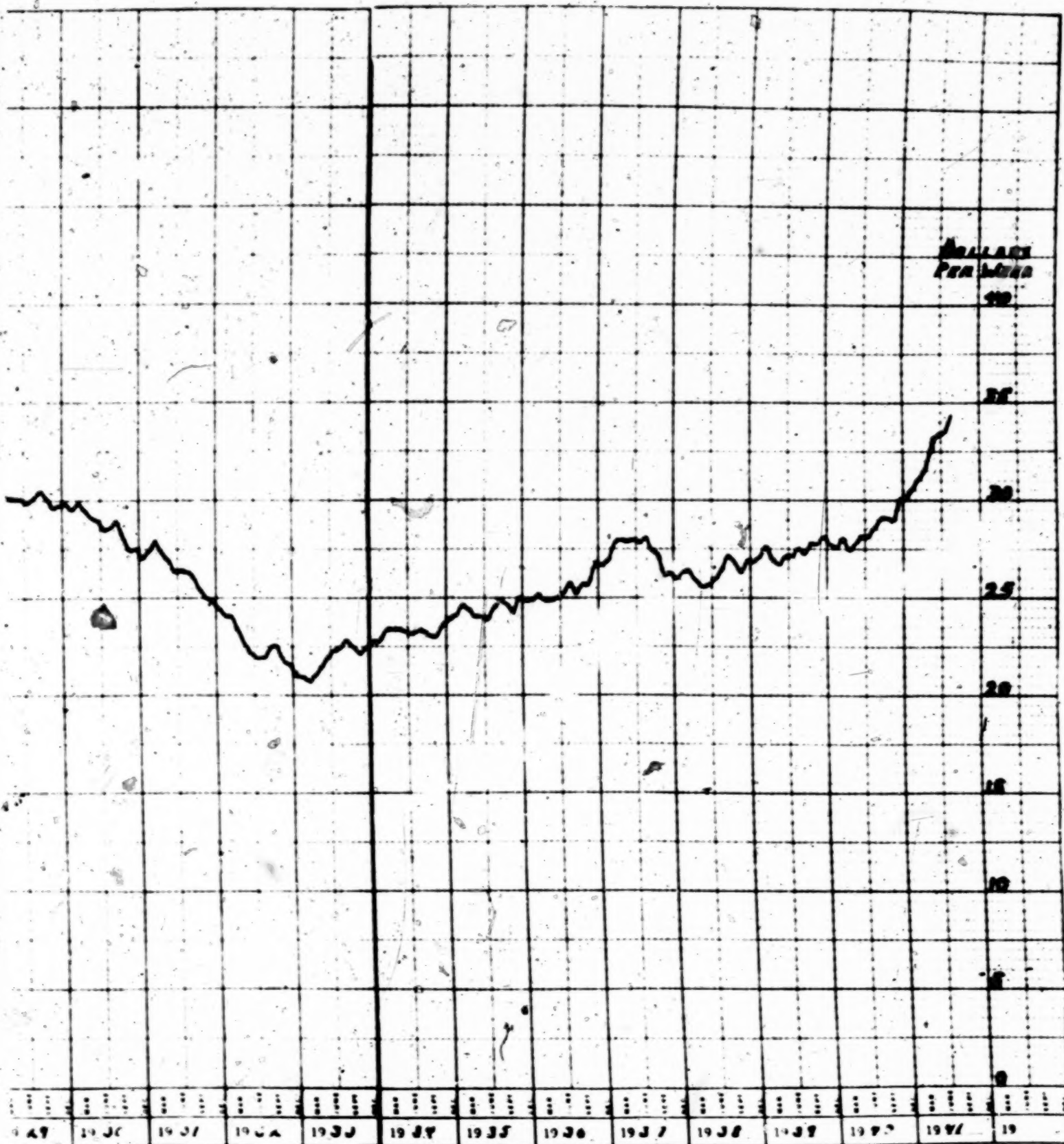
40  
35  
30  
25  
20  
15  
10  
5  
0

**SOURCE: NEW YORK STATE, DEPARTMENT OF LABOR,  
MONTHLY PUBLICATION "THE INDUSTRIAL  
BULLETIN", Vol. 20, No. 1, JAN, 1941, P. 19.**

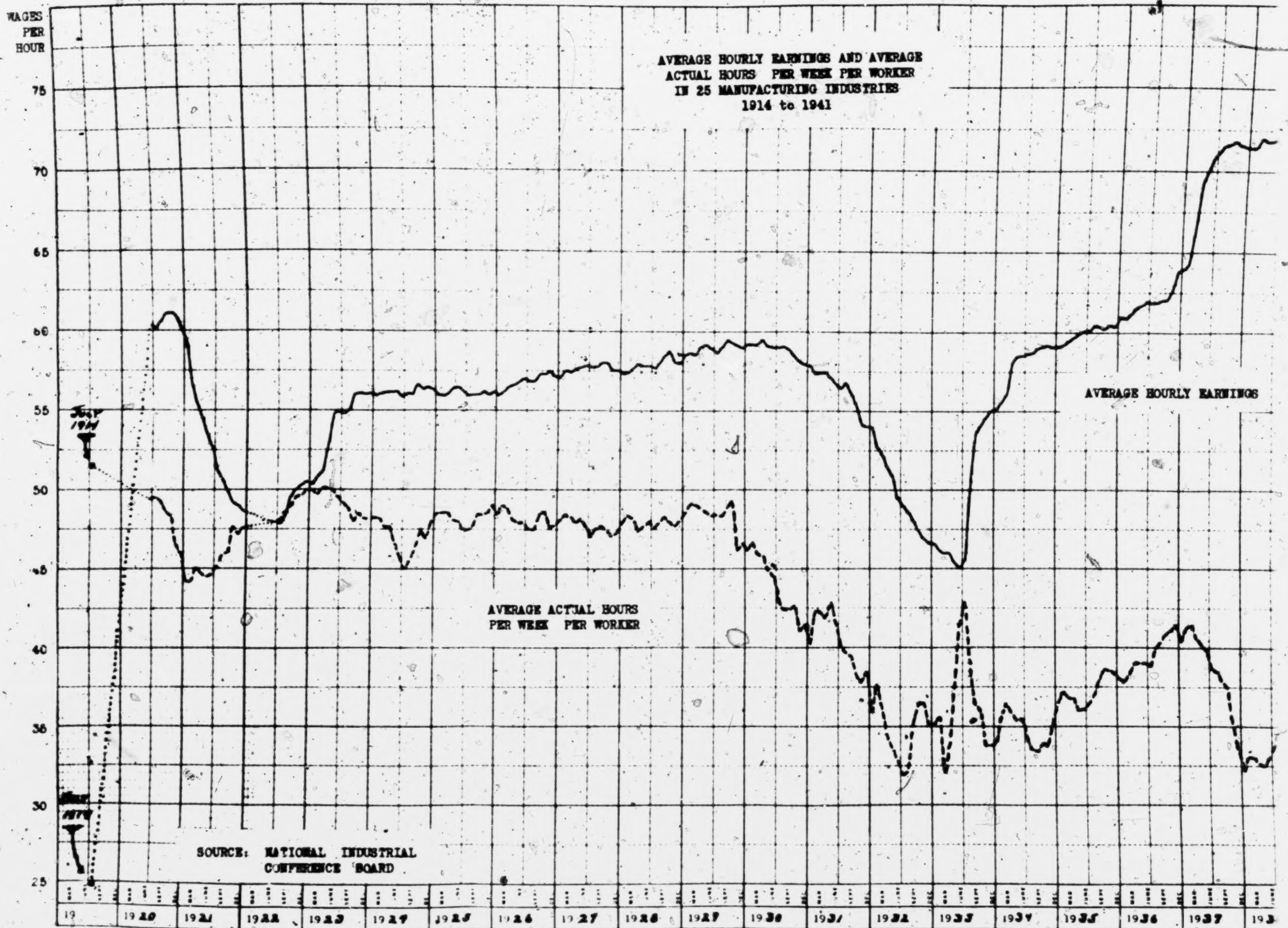
1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941
------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------











4341

HOURS  
PER  
WEEK

75

70

65

60

AVERAGE HOURLY EARNINGS

55

50

45

40

35

30

25

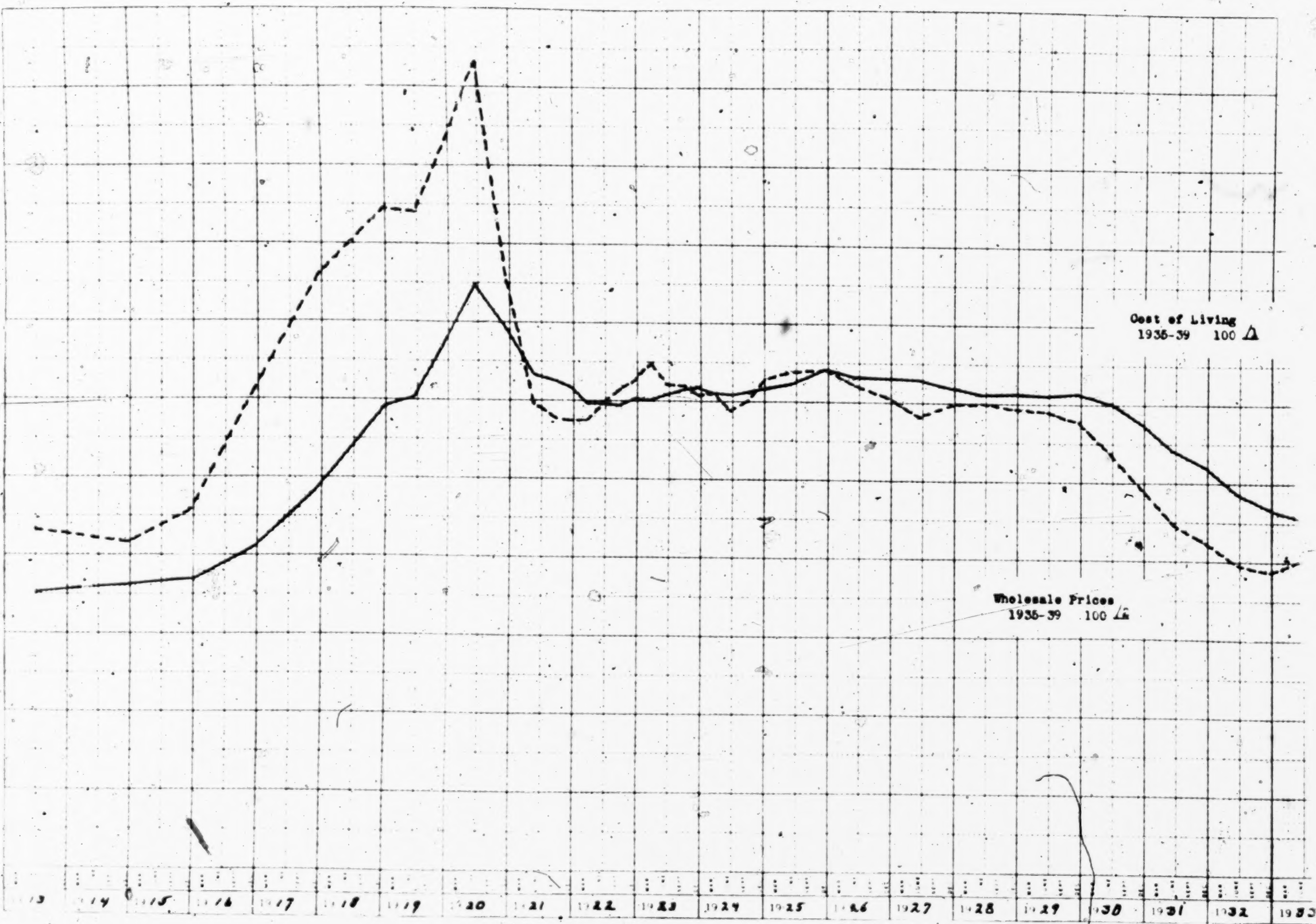
1935	1936	1937	1938	1939	1940	1941
JAN	JAN	JAN	JAN	JAN	JAN	JAN
FEB	FEB	FEB	FEB	FEB	FEB	FEB
MAR	MAR	MAR	MAR	MAR	MAR	MAR
APR	APR	APR	APR	APR	APR	APR
MAY	MAY	MAY	MAY	MAY	MAY	MAY
JUN	JUN	JUN	JUN	JUN	JUN	JUN
JUL	JUL	JUL	JUL	JUL	JUL	JUL
AUG	AUG	AUG	AUG	AUG	AUG	AUG
SEP	SEP	SEP	SEP	SEP	SEP	SEP
OCT	OCT	OCT	OCT	OCT	OCT	OCT
NOV	NOV	NOV	NOV	NOV	NOV	NOV
DEC	DEC	DEC	DEC	DEC	DEC	DEC

Index  
1913=100

200  
180  
160  
140  
120  
100  
80  
60  
40  
20

Cost of Living  
1935-39 100  $\Delta$

Wholesale Prices  
1935-39 100  $\Delta$





Index  
Number

200

160

140

120

100

80

60

40

20

0

Cost of Living  
1935-39 100  $\Delta$

Wholesale Prices  
1935-39 100  $\Delta$

Source:

$\Delta$  Bureau of Labor Statistics  
 $\Delta$  Computed from Bureau of Labor  
Statistics' Index

28 1929 1930 1931 1932 1933 1934 1935 1936 1937 1938 1939 1940 1941

[fol. 13270]

(Exhibit 62.)

Panhandle Eastern Pipe Line Company and  
Subsidiary Companies.

Deduction From Cost of Reproduction New For  
Depreciation and  
Present Value  
of

Plant, Property and Business as of  
June 30, 1941.

P. McDonald Biddison, Consulting Engineer  
Dallas, Texas.

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[fol. 13271]

P. McDonald Biddison  
Consulting Engineer  
Dallas Gas Building  
Dallas, Texas

September 30, 1941.

Panhandle Eastern Pipe Line Company  
90 Broad Street  
New York, N. Y.

Attention: Mr. J. D. Creveling, President

Gentlemen:

I have made an estimate, based upon an inspection, of the amounts to be deducted from my estimate of Cost of Reproduction New as of June 30, 1941, of the consolidated Plant, Property and Business of Panhandle Eastern Pipe Line Company and Subsidiary Companies (Report of August 26, 1941) for depreciation that has occurred in the property. The total of the amount is \$4,121,749.80, result-



4346

ing in a Present Value of \$79,711,698.74 as detailed in subsequent pages hereof.

Yours very truly,

(Seal)

P. McDONALD BIDDISON;  
Consulting Engineer.

PMcDB/IF

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## Panhandle Eastern Pipe Line Company And Subsidiary Companies

: Present Value Of Plant, Property And Business  
As Of June 30, 1941

## General Summary

Line No.	Item (A)	Reproduction Cost — New (B)	Deduct for Depreciation (C)	Present Value (D)
1	Production System Property			
2	Land	\$ 971 02	\$ —	\$ 971 02
3	Leaseholds	8 695 524 00	—	8 695 524 00
4	Gas Wells and Equipment	2 053 884 39	180 364 61	1 873 519 78
5	Other Production System Structures	42 188 75	5 615 44	36 573 31
6	Drilling and Clean-out Equipment	20 676 46	5 169 11	15 507 35
7	Total — Production System	\$10 813 244 62	\$ 191 149 16	\$10 622 095 46
8	Transmission System Property			
9	Land	\$ 55 909 84	\$ —	\$ 55 909 84
10	Right of Way	1 278 521 36	—	1 278 521 36
11	Meas. and Reg. Structures	104 475 27	11 137 11	93 338 16
12	Other Trans. System Structures	382 920 59	38 572 16	344 348 43
13	Meas. and Reg. Equipment	491 685 32	39 350 84	452 334 48
14	Transmission Mains	41 960 870 15	2 642 841 44	39 318 028 71
15	Compressor Stations	9 764 143 60	628 607 30	9 135 536 30
16	Other Trans. System Equipment	128 657 49	11 936 18	116 721 36
17	Total — Transmission System	\$ 54 167 183 62	3 372 444 98	50 794 738 64
18	Gasoline Production System Property			
19	Liberal Gasoline Plant	\$ 621 510 23	\$ 37 600 00	\$ 583 820 23
20	Total — Gasoline Prod. System	\$ 621 510 23	\$ 37 600 00	\$ 583 820 23
21	General System Property			
22	General Office Equipment	\$ 78 082 36	\$ 11 712 35	\$ 66 370 01
23	General Transportation Equipment	109 971 90	21 702 18	88 269 72
24	General Laboratory Equipment	6 550 71	1 310 14	5 240 57
25	General Communication Equipment	492 708 29	49 690 12	443 018 17
26	General Tools and Equipment	40 251 86	10 062 97	30 188 89
27	Total — General System	\$ 727 565 12	\$ 94 477 76	\$ 633 087 36
28	Total — Direct Construction Cost	\$ 66 329 503 59	\$3 695 761 90	\$62 633 741 69
29	Intangible Fixed Capital	497 471 27	—	497 471 27
30	Undistributed Construction Expenditures	7 647 897 58	425 987 90	7 221 909 68
31	Construction Work in Progress	149 669 62	—	149 669 62
32	Total — Fixed Property	\$ 74 624 542 06	\$4 121 749 80	\$70 502 792 26
33	Working Capital	\$ 1 569 000 00	—	\$ 1 569 000 00
34	Value of Gas Purchase Contracts	1 585 914 00	—	1 585 914 00
35	Cost of Business Development	6 053 992 48	—	6 053 992 48
36	Total — Plant, Property, Business	\$ 83 833 448 54	\$4 121 749 80	\$79 711 698 74

[fol. 13321]      Exhibit 63.

Investors' Appraisal of the Risks of Capital In the Natural  
Gas Industry as Compared with Other Divisions of  
the Utility Industry.

Volume I.

Summary of Analyses.

Prepared by.

Paul B. Coffman, Vice President  
of  
Standard & Poor's Corporation

[fol. 13322]      Table of Contents.

Statement of Experience and Qualifications of  
Paul B. Coffman.

Written Statement  
of

Paul B. Coffman

1. Purpose of this Exhibit

Investors' Appraisal of the Risks of Capital in  
the Natural Gas Industry as Compared with  
Other Divisions of the Utility Industry

1. Method of Procedure

Table: Indicated Market Value of the Securities  
Outstanding of the Boston Edison Com-  
pany for 1940

Table: Indicated Market Value of the Securities  
Outstanding of the Boston Edison Com-  
pany for the Interim Period of 1941, Janu-  
ary-August, Both Inclusive

2. Analysis of Data on Water Companies

Table: Determination of Investors' Appraisal of  
Risks of Capital for Water Company  
Securities

### 3. Analysis of Data on Electric Utility Operating Companies

Table: Determination of the Investors' Appraisal of Risks of Capital for Electric Utility Operating Companies

### 4. Analysis of Data on Manufactured and Mixed Gas Companies

Table: Determination of the Investors' Appraisal of Risks of Capital for Manufactured and Mixed Gas Companies

### 5. Analysis of Data on Natural Gas Companies

Table: Grand Total of Securities of 43 Natural Gas Companies Which Appear to be Fully Representative of the industry

Table: Total Securities Outstanding of 13 Natural Gas Companies Upon Which Investors' Appraisals of the Risks of Capital Have Been Computed

[fol. 13323] Table: Determination of the Investors' Appraisal of the Risks of Capital for Natural Gas Companies

Table: Determination of the Investors' Appraisal of the Risks of Capital for Natural Gas Pipe Line Companies

Table: Determination of the Investors' Appraisal of the Risks of Capital of the Panhandle Eastern Pipe Line Company

### 6. Summary of Analyses

Chart: Investors' Appraisal of Capital Risks in Various Divisions of the Utility Business

Table: Investors' Appraisal of Capital Risks in Various Divisions of the Utility Business

#### Statements

Investors' Appraisal of Risks of Capital for the Years 1937, 1938, 1939 and 1940—Water Companies

Investors' Appraisal of Risks of Capital for the Interim Period of 1941, January-August, Both Inclusive—Water Companies A-1

Investors' Appraisal of Risks of Capital for the Years 1937, 1938, 1939 and 1940—Electric Utility Operating Companies B

Investors' Appraisal of Risks of Capital for the Interim Period of 1941, January-August, Both Inclusive—Electric Utility Operating Companies B-1

Investors' Appraisal of Risks of Capital for the Years 1937, 1938, 1939 and 1940—Manufactured and Mixed Gas Companies C

Investors' Appraisal of Risks of Capital for the Interim Period of 1941, January-August, Both Inclusive—Manufactured and Mixed Gas Companies C-1

Investors' Appraisal of Risks of Capital for the Years 1937, 1938, 1939 and 1940—All Natural Gas Companies D

Investors' Appraisal of Risks of Capital for the Interim Period of 1941, January-August, Both Inclusive—All Natural Gas Companies D-1

Investors' Appraisal of Risks of Capital for the Years 1937, 1938, 1939 and 1940—Natural Gas Pipe Line Companies E

[fol. 13324] Investors' Appraisal of Risks of Capital for the Interim Period of 1941, January-August, Both Inclusive—Natural Gas Pipe Line Companies E-1

General Information Covering Each Company as to the Nature and Size of the Business and the Territory Served F

#### I. Water Companies

1. Bridgeport Hydraulic Company
2. Elizabethtown Water Company, Consolidated
3. Hackensack Water Company
4. Middlesex Water Company
5. New Haven Water Company
6. Plainfield Union Water Company
7. Stamford Water Company



## II. Electric Utility Operating Companies

1. Bangor Hydro Electric Company
2. Boston Edison Company
3. Central Hudson Gas & Electric Corporation
4. Cleveland Electric Illuminating Company (The)
5. Commonwealth Edison Company
6. Connecticut Power Company (The)
7. Consolidated Edison Company of New York, Inc.
8. Consolidated Gas, Electric Light & Power Company of Baltimore
9. Detroit Edison Company
10. Duke Power Company
11. Hartford Electric Light Company (The)
12. Pacific Gas & Electric Company
13. Pennsylvania Water & Power Company
14. Southern California Edison Company, Ltd.
15. Tampa Electric Company

## III. Manufactured and Mixed Gas Companies

1. Bridgeport Gas Light Company
2. Brooklyn Union Gas Company
3. Elizabethtown Consolidated Gas Company
4. Hartford Gas Company
5. Laelege Gas Light Company
6. Peoples Gas Light & Coke Company
7. Providence Gas Company
8. Seattle Gas Company
9. Springfield (Mass.) Gas Light Company
10. Washington Gas Light Company

## IV. Natural Gas Companies

1. Arkansas Louisiana Gas Company

[fol. 13325] IV. Natural Gas Companies (continued)

2. Atlantic Seaboard Corporation
3. Cabot, Inc., Godfrey L.
4. Canadian River Gas Company

5. Carnegie Natural Gas Company
6. Chicago District Pipeline Company
7. Cincinnati Gas Transportation Company
8. Cities Service Gas Company
9. Colorado Interstate Gas Company
10. Consolidated Gas Utilities Corporation
11. East Ohio Gas Company
12. El Paso Natural Gas Company
13. Hope Natural Gas Company
14. Houston Natural Gas Corporation
15. Interstate Natural Gas Company, Inc.
16. Kentucky West Virginia Gas Company
17. Lone Star Gas Corporation
18. Manufacturers Light and Heat  
Company
19. Memphis Natural Gas Company
20. Michigan Gas Transmission  
Corporation
21. Mississippi River Fuel Corporation
22. Montana-Dakota Utilities Company
23. Mountain Fuel Supply Company
24. National Fuel Gas Company
25. Natural Gas Company of West Virginia
26. Natural Gas Pipeline Company of  
America
27. New York State Natural Gas  
Corporation
28. Northern Natural Gas Company
29. North Penn Gas Company
30. Ohio Fuel Gas Company
31. Oklahoma Natural Gas Company
32. Pacific Lighting Corporation
33. Panhandle Eastern Pipe Line Company
34. Peoples Natural Gas Company
35. Pittsburgh and West Virginia Gas  
Company
36. Southern Natural Gas Company
37. South Penn Natural Gas Company
38. Texoma Natural Gas Company
39. United Fuel Gas Company
40. United Gas Pipe Line Company

- 41. Virginia Gas Transmission Corporation
- 42. Warfield Natural Gas Company
- 43. West Texas Gas Company

[fol. 13327] Statement of Experience and Qualifications  
of

Paul B. Coffman

1. Name, Address and Age

Paul B. Coffman, 222 Sylvania Place, Westfield, N. J.,  
Age 40.

2. Education

Graduate of Ohio State University, 1923, with degree of Bachelor of Science; graduate of Harvard University Graduate School of Business Administration, 1926, with degree of Master of Business Administration.

3. Present Position

Vice President, in charge of Research and Valuation, and Director, of Standard & Poor's Corporation (recently formed as a consolidation of Standard Statistics Company, Inc. and Poor's Publishing Company), a corporation engaged, among other things, in gathering, collating, analyzing and disseminating statistical and general information on all phases of business, industry and investments and offering professional, industrial consulting, valuation and research services.

4. Experience and Qualifications

Upon graduation in 1926 from Harvard University I became Professor of Economics and Accounting at the College of William and Mary, Williamsburg, Virginia. In September 1927, I returned to the Harvard Graduate School of Business Administration, where I joined the Faculty and became an assistant professor and tutor and remained until the end of 1936. The particular subjects I taught were accounting, corporate management and business policy.

[fol. 13328] While teaching at the Graduate School of Business Administration at Harvard University, I also

served as consulting economist for a number of industrial and financial advisory corporations, including both Standard Statistics Company, Inc., with which I became associated in 1928, and Poor's Publishing Company, publisher of Poor's Manuals, with which I became associated in 1931, and which are the predecessor companies of the present Standard & Poor's Corporation. During 1931 and 1932 I served as Executive Vice President and General Manager of Poor's Publishing Company. Also, I was collaborator on several books of accounting and business policy and author of several articles.

Over a period of years I have been retained to make investigations upon a large number of diversified situations, many of which required that I present my analysis and testify as to my conclusions before the courts, the Internal Revenue Department, the Board of Tax Appeals, and several regulatory bodies, such as, the Civil Aeronautic Authority, State Public Utility Commissions and the Federal Power Commission.

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[fol. 13330] Written Statement Of Paul B. Coffman

1. Purpose of This Exhibit.

In August of this year, Standard & Poor's Corporation (through Paul B. Coffman, Vice-President and Director of this Company) was retained by the Panhandle Eastern Pipe Line Company to make a study relative to a fair rate of return on capital invested in that company. Data covering such study are contained in a separate volume.

As a collateral part of such undertaking, however, a statistical study was made to determine the investors' appraisal of the risks of capital invested in the natural gas pipe line business as compared with the risk of capital invested in other utility industries. Such study covered the following utility classifications, namely, (a) water companies, (b) electric utility operating companies, (c) manu-

factured and mixed gas companies, (d) natural gas companies and (e) natural gas pipe line companies. The telephone industry, which is logically a division of the utility industry, was excluded inasmuch as it was so largely dominated by the American Telephone and Telegraph Company system and market prices for many of the securities of the underlying operating companies were not obtainable.

This exhibit presents the findings that resulted from such investigation:

[fol. 13331] Investors' Appraisal of the Risk of Capital in the Natural Gas Industry as Compared With Other Divisions of the Utility Industry.

#### 1. Method of Procedure

A group of companies in each of the utility classifications were selected on bases which will be described below. Statement F of this exhibit contains a general description of the business of each of the companies and the territory in which it operates.

The general method of procedure as to each company and group of companies involved four steps, as follows:

(1) For the years 1937, 1938, 1939 and 1940, the indicated total market value of all of the securities of a single company was determined by taking the sum of the amounts produced by multiplying the number of each class of security (bonds, preferred and common stocks as the case may be) outstanding at the end of each year by the average of its high and low market quotations in that year. For the interim period of 1941, January-August, both inclusive, the same procedure was followed excepting that the latest record of securities outstanding and the average of the high and low market quotations for the period were used.



[fol. 13332] Examples:

A. Indicated Market Value of the Securities Outstanding of the  
Boston Edison Company for 1940

	Capital Outstanding Dec. 31, 1940	1940 Market Prices			Indicated Market Value
		High	Low	Average	
Capital Stock (\$25 par)	2,468,656 shs.	36 $\frac{3}{4}$	30 $\frac{3}{4}$	33.75	\$ 83,317,140
1st Mortgage Bonds 2 $\frac{3}{4}$ s 1970	\$53,000,000	—	—	*103.53	54,870,900
Total					\$138,188,040

Note: \*Offering price of \$103.53 used since issue was sold on December 10, 1940.

B. Indicated Market Value of the Securities Outstanding of the  
Boston Edison Company for the Interim Period of 1941,  
January-August, Both Inclusive

	Capital Outstanding Dec. 31, 1940	Jan. 1, to Aug. 31, 1941 Market Prices			Indicated Market Value
		High	Low	Average	
Capital Stock (\$25 par)	2,468,656 shs.	34 $\frac{3}{4}$	26 $\frac{5}{8}$	30.69	\$ 75,763,053
1st Mortgage Bonds 2 $\frac{3}{4}$ s 1970	\$53,000,000	104 $\frac{3}{8}$	101	102.69	54,425,700
Total					\$130,188,753

(2) Next there was determined for the individual company the total earnings available for distribution to the securities after taxes, depreciation and all other miscellaneous charges, as reported in the particular company's reports to stockholders. For the years 1937, 1938, 1939 and 1940, earnings as shown in the published annual reports for the years in question were used. For the interim period of 1941, January-August, both inclusive, the [fol. 13333] latest reported earnings covering a twelve month period were used, the dates of which are clearly indicated in the statements at the end of this exhibit.

Examples:

A. The consolidated earnings of the Boston Edison Company for 1940 available for its capital after taxes, de-

preciation and other miscellaneous charges, as shown in the published report to its stockholders for 1940, were \$7,730,837.

B. For the interim period of 1941, January-August, both inclusive, the latest reported earnings for this particular company covered the twelve months ended June 30, 1941 and were \$7,703,746, as computed from the interim report to stockholders.

(3) The earnings so determined under (2) A and B were then divided by the indicated market value of all securities as determined under (1) A and B respectively, and a rate for the period in question was thus obtained.

#### Examples:

A. In the case of the Boston Edison Company for the calendar year of 1940, dividing the consolidated earnings available for capital, in the amount of \$7,730,837, as shown above, by the indicated market value of all capital of \$138,188,040, gives a percentage of 5.59 per cent., which, in my opinion, fairly indicates the investors' appraisal of the risks of capital employed in that enterprise for the year 1940.

B. Applying the same formula to the interim period of 1941, January-August, both inclusive, the investors' appraisal of the risks of capital employed in that enterprise for the period in question is indicated at 5.92 per cent.

(4) Having determined in the manner described above the investors' appraisal of the risks of capital employed in each company selected, the indicated market value of the companies in each group determined under (1) A and B above, was added to obtain the indicated market value of the capital securities of the entire group. Similarly, the earnings available for distribution to the securities of [fol. 13334] each of the companies, as determined under (2) A and B above, were added to obtain the total earnings available for distribution to securities of the entire group. The latter figure was then divided by the former in order to obtain the investors' overall appraisal of the risks of all capital in the group. This was done for each of the years

1937, 1938, 1939 and 1940, and for the interim period of 1941, January-August, both inclusive.

The results of such computations for the years 1937, 1938, 1939 and 1940 appear as Statements A to E of this exhibit. Statements A-1 to E-1, present such data for the interim period of 1941, January-August, both inclusive.

The complete working papers, upon which these statements are based are presented in Appendix C of the accompanying book of tables.

## 2. Analysis of Data on Water Companies

[fol. 13335] A list of all operating companies engaged solely in the water business was first prepared from Standard Corporation Records and appears on pages 1 and 2 of Appendix A in the accompanying book of tables. From this list of 72 companies, eliminations were made for the following reasons:

(1) Companies whose common stocks were held by one of the larger holding companies, such as American Water Works & Electric Company, the Federal Water Service Corporation and the Community Water Service Company, and whose stocks had no obtainable market evaluation.

(2) Companies whose stocks were closely held by relatively few individuals and had no available market evaluation.

(3) Companies whose 1940 gross operating revenues were less than \$500,000. This latter class was not deemed of sufficient importance to be included in the study.

The result of these eliminations in the overall list was the following group of seven water companies:

Bridgeport Hydraulic Company  
 Elizabethtown Water Company, Consolidated  
 Hackensack Water Company  
 Middlesex Water Company  
 New Haven Water Company  
 Plainfield-Union Water Company  
 Stamford Water Company

For each of these companies and for the group of companies, for each of the years 1937, 1938, 1939 and 1940, and for the interim period of 1941, January-August, both inclusive, the investors' appraisal of the risks of capital as a percentage was obtained by application of the method fully described in Section 1 above.

The actual results of these determinations for the group of water companies are presented in the following table:

[fol. 13336] Determination of Investors' Appraisal of Risks of Capital for Water Company Securities			
	Total Indicated Market Value of Capital	Total Earnings Available for Capital	Investors' Appraisal of Risks of Capital
1937	\$79,750,400	\$4,410,321	5.53%
1938	78,545,433	4,114,060	5.24%
1939	79,635,529	4,494,594	5.64%
1940	83,244,017	4,272,794	5.13%
Interim Period Jan.-Aug. 1941	81,816,519	4,289,313	5.24%

In other words, this analysis indicated that investors appraised the risks of capital invested in water companies as a group in 1937, 1938, 1939 and 1940 respectively, at 5.53 per cent, 5.24 per cent, 5.64 per cent and 5.13 per cent, or an average of the four years of 5.38 per cent.

On the basis of data available for the interim period of 1941, January-August, both inclusive, the investors' appraisal of the risks of capital in this industry was 5.24 per cent.

Supporting data on each of the companies mentioned and for each of the years studied, as well as total figures for the group, are presented in Statements A and A-1 at the end of this exhibit.

### 3. Analysis of Data on Electric Utility Operating Companies

[fol. 13337] From an "Alphabetical List of Telephone, Electric and Gas Utility Common Stocks Considered in the Course of the Study of Certain Factors Influencing Investors' Appraisals of Risk Characteristics," carried as Schedule 9 of a Federal Communications Commission publication issued June 15, 1938 and entitled "The Problem of the Rate of Return in Public Utility Regulation," were

selected all electric operating utility companies whose common stocks were outstanding in the hands of the public to the extent of at least five per cent.

The complete list of 40 telephone, electric and gas companies, included in the above-cited Schedule appears as page 3, Appendix A, in the accompanying book of tables. As shown in such Appendix, eliminations were made for the following reasons:

(1) Companies whose revenues were derived primarily from telephone service.

(2) Companies whose revenues were derived primarily from gas service.

(3) Companies whose common stocks were outstanding in the hands of the public to an extent less than five per cent.

(4) Companies which were primarily holding companies.

The result of these eliminations from the overall list was the following group of fifteen electric utility operating companies:

Bangor Hydro-Electric Company  
 Boston Edison Company  
 Central Hudson Gas & Electric Company  
 Cleveland Electric Illuminating Company  
 Commonwealth Edison Company  
 Connecticut Power Company  
 Consolidated Edison Company of New York  
 Consolidated Gas, Electric Light & Power Company of  
 Baltimore  
 Detroit Edison Company  
 Duke Power Company  
 Hartford Electric Light Company  
 Pacific Gas & Electric Company  
 [fol. 13338] Pennsylvania Water & Power Company  
 Southern California Edison Company, Ltd.  
 Tampa Electric Company

The method of determining the investors' appraisal of the risks of capital in this division of the utility industry



was the same as that previously described in Section 1 above.

The actual results of these determinations for the group of electric utility operating companies are presented in the following table:

Determination of the Investors' Appraisal of Risks of Capital for Electric Utility Operating Companies

	Total Indicated Market Value of Capital	Total Earnings Available for Capital	Investors' Appraisal of Risks of Capital
1937	\$2,813,738,284	\$208,472,836	5.47
1938	3,691,943,124	203,823,995	5.52
1939	3,963,437,231	214,645,674	5.42
1940	3,963,963,695	216,540,166	5.46
Interim Period Jan-Aug., 1941	3,816,860,487	214,235,818	5.61

In other words, this analysis indicated that investors appraised the risks of capital invested in electric operating utility companies as a group in 1937, 1938, 1939 and 1940, respectively, at 5.47 per cent, 5.52 per cent, 5.42 per cent and 5.46 per cent, or an average for the four years of 5.47 per cent.

On the basis of data available for the interim period of 1941, January-August, both inclusive, the investors' appraisal of the risks of capital in this industry was 5.61 per cent.

Supporting data on each of the companies mentioned and for each of the years studied, as well as total figures for the group, are presented in Statements B and B-1 at the end of this exhibit.

#### 4. Analysis of Data on Manufactured and Mixed Gas Companies

[fol. 13339] A list was prepared of all operating companies distributing manufactured or mixed gas from Standard Corporation Records and appears on pages 4 and 5, Appendix A in the accompanying book of tables. From this list of companies, eliminations were made for the following reasons:

(1) \*Companies whose stocks were controlled completely, or practically so, by a holding company and for which there was no market evaluation.

(2) Companies whose gross revenue was predominantly obtained from services other than the distribution of manufactured and/or mixed gas.

(2) Companies with gross revenues in 1940 of less than \$1,000,000, because these were too small to have any important bearing on the final results.

The result of these eliminations was the following ten manufactured and mixed gas companies:

Bridgeport Gas Light Company.  
 Brooklyn Union Gas Company.  
 Elizabethtown Consolidated Gas Company.  
 Hartford Gas Company.  
 Laclede Gas Light Company.  
 Peoples Gas Light & Coke Company.  
 Providence Gas Company.  
 Seattle Gas Company.  
 Springfield Gas Light Company.  
 Washington Gas Light Company.

The method of determining the investors' appraisal of the risks of capital in this division of the utility industry was that previously described in Section 1 above.

The actual results of these determinations for the group of manufactured and mixed gas companies are presented in the following table:

[fol. 13340] Determination of the Investors' Appraisal of the Risks of Capital for Manufactured and Mixed Gas Companies

	Total Indicated Market Value of Capital	Total Earnings Available for Capital	Investors' Appraisal of Risks of Capital
1937	\$284,278,897	\$17,398,250	6.12
1938	243,001,879	16,341,221	6.72
1939	262,358,022	17,630,433	6.72
1940	262,719,698	18,001,079	6.89
Interim Period Jan.-Aug. 1941	267,129,045	18,817,497	7.34

In other words, the analysis indicated that investors appraised the risks of capital invested in manufactured

and mixed gas companies in 1937, 1938, 1939 and 1940, respectively, at 6.12 per cent, 6.72 per cent, 6.72 per cent and 6.89 per cent, or an average for the four years of 6.61 per cent.

On the basis of data available for the interim period of 1941, January-August, both inclusive, the investors' appraisal of the risks of capital in this industry was 7.04 per cent.

Supporting data on each of the companies mentioned and for each of the years studied, as well as total figures for the group, are presented in Statements C and C-1 at the end of this exhibit.

##### 5. Analysis of Data on Natural Gas Companies

[fol. 13341] The list of natural gas companies from which selections were made to determine the investors' appraisal of risks of capital for this industry was the same as that prepared by Mr. Charles W. Knapp, Jr., of the Federal Power Commission, in an exhibit entitled "Rate of Return", which was submitted in the Hope Natural Gas Company hearings. This list was used since it appeared to be fully representative of the industry. Mr. Knapp testified that

"in preparing this list an attempt was made to include all natural gas companies which had the following characteristics:

(1) Companies engaged in the production and transmission of natural gas and sales thereof at wholesale and to main-line industrial customers.

(2) Companies engaged in the transmission of natural gas and sales thereof at wholesale and to main-line industrial customers.

(3) Companies such as those described in (1) and (2) above which also conduct retail distribution operations.

(4) Companies so engaged which have annual operating revenues of \$2,000,000 or more."

Data showing the total securities outstanding of these 43 companies, as well as the amount of such securities held by the public, by institutions or by affiliates, are shown in

Appendix B, pages 1 to 10, in the accompanying book of tables. The grand total of such securities so classified appears in the following table:

[fol. 13342]

Grand Total of Securities of 43 Natural Gas Companies  
Which Appear to be Fully Representative of the Industry

	Total	Held by		
	Outstanding Securities	Public	Institutions	Affiliates
Bonds	\$248,242,000	\$ 96,771,000	\$ 87,464,000	\$ 64,007,000
Debentures	44,400,000	—	900,000	43,500,000
Notes	120,692,935	33,548	94,437,500	26,221,887
Advances	59,380,500	—	—	59,380,500
Total	\$472,715,435	\$96,804,548	\$182,801,500	\$193,109,387
Preferred Stock	98,776,810	63,115,810	—	35,661,000
Common Stock	610,281,266	206,379,521	451,697	403,450,048
Grand Total	\$1,181,773,511	\$366,299,879	\$183,253,197	\$632,220,435

As shown by the above table, the total of outstanding securities at book values was \$1,181,773,511, of which \$610,281,266, or 51.6 per cent, was represented by common stocks, \$98,776,810, or 8.4 per cent, by preferred stocks, and \$472,715,435, or 40.0 per cent, by bonds, debentures, notes and advances.

The table also discloses that of the total securities outstanding, \$366,299,879, or 31.0 per cent, was outstanding in the hands of the public, \$183,253,197, or 15.5 per cent, was held by institutions, with the remaining \$632,220,435, or 53.5 per cent, held by affiliated companies.

From this original list of 43 companies were eliminated all companies whose common stocks were not outstanding in the hands of the public and for which an investment appraisal of this portion of capital was not obtainable. After giving effect to these eliminations, which are shown in Appendix A, page 6, in the accompanying book of tables, the following 13 companies remained:

[fol. 13343] Consolidated Gas Utilities Corporation  
El Paso Natural Gas Company  
Houston Natural Gas Corporation

Interstate Natural Gas Corporation  
 Lone Star Gas Corporation  
 Memphis Natural Gas Company  
 Montana-Dakota Utilities Company  
 Mountain Fuel Supply Company  
 National Fuel Gas Company  
 Oklahoma Natural Gas Company  
 Pacific Lighting Corporation  
 Panhandle Eastern Pipe Line Company  
 Southern Natural Gas Company

The aggregate book value of the securities outstanding of these 13 companies, as well as data showing the ownership of such securities, is shown in the following table:

Total Securities Outstanding of 13 Natural Gas Companies  
 Upon Which Investors' Appraisals of the Risks of Capital  
 Have Been Computed

	Total Outstanding Securities	Held by		
		Public	Institutions	Affiliates
Bonds	\$124,771,000	\$93,926,000	\$30,845,000	\$ —
Debentures	900,000	—	900,000	—
Notes	51,021,048	33,548	50,987,500	—
Advances	—	—	—	—
Total	\$176,692,048	\$93,959,548	\$82,732,500	\$ —
Preferred Stock	73,504,710	62,504,710	—	11,000,000
Common Stock	242,695,764	206,379,521	—	36,316,243
Grand Total	\$492,892,522	\$362,843,779	\$82,732,500	\$47,316,243

The aggregate book value of securities of the 13 companies used to determine investors' appraisal of the risks of capital for the natural gas industry was \$492,892,522, or 41.7 per cent of the aggregate book value of all 43 natural gas companies. The percentage distribution in various types of securities was 49.2% in common stocks, 14.9% in preferred stock and 35.9% in debt composed of bonds, [fol. 13344] debentures, notes and advances.

All of the outstanding securities of these 13 companies were not held by the public. Owing to the practice in recent years of selling many senior issues privately, \$82,732,500, or 46.8 per cent of the total debt outstanding was held



by institutions. In such cases it was necessary to estimate the investors' appraisal of this particular portion of the capital. However, the possible margin of error in making such estimate was very small in view of available data on original offering prices and the subsequent trend of quotations for publicly held securities.

Likewise, \$11,000,000, or 15.0 per cent, of the total preferred stock outstanding was held by affiliated companies. This amount was represented by the two issues of preferred stock of the Panhandle Eastern Pipe Line Company which were outstanding in the name of Gano Dunn, Trustee for Columbia Oil & Gasoline Corporation. Here again, estimates had to be made of the investors' appraisal of these particular securities, but the margin of error in making such estimates on stocks calling for a fixed dividend payment obviously could not be great.

Of the common stocks, \$36,316,243, or 15.0 per cent of the total book value of common stock of the 13 companies, was also held by affiliates. In no case, however, did affiliated companies own 100% of the outstanding common stock of any particular company and therefore the investors' appraisal of the common stocks as indicated by the record of price quotations on the publicly held portions of the issues were used to determine the aggregate value of all the stock outstanding.

[fol. 13345] The procedure followed in determining the investors' appraisal of the risks of capital in the natural gas division of the utility industry was that previously described in Section 1 above.

The actual results of these determinations for the group of natural gas companies are presented in the following table:

Determination of the Investors' Appraisal of the  
Risks of Capital for National Gas Companies

	Total Indicated Market Value of Capital	Total Earnings Available for Capital	Investors' Appraisal of Risks of Capital
1937	\$490,968,147	\$38,321,861	7.81%
1938	444,508,937	34,158,780	7.68
1939	541,190,084	41,120,890	7.60
1940	535,528,213	43,004,588	8.03
Interim Period Jan.-Aug., 1941	542,388,315	43,774,736	8.07

In other words, this analysis indicated that investors appraised the risks of capital invested in natural gas companies in 1937, 1938, 1939 and 1940, respectively, at 7.81 per cent, 7.68 per cent, 7.60 per cent and 8.03 per cent, or an average for the four years of 7.78 per cent.

On the basis of the data available for the interim period of 1941, January-August, both inclusive, the investors' appraisal of the risks of capital in this industry was 8.07 per cent.

Supporting data on each of the companies mentioned and for each of the years studied, as well as total figures for the group, are presented in Statements D and D-1 at the end of this exhibit.

Included in the 13 natural gas companies listed above were the following pipe line companies:

- El Paso Natural Gas Company
- Interstate Natural Gas Company
- Memphis Natural Gas Company
- Panhandle Eastern Pipe Line Company
- Southern Natural Gas Company

[fol. 13346] These companies were comparable from the viewpoint that in all cases revenue was derived principally from the transportation of gas through a long pipe line. In no case was the ultimate distributing system operated by the pipe line company.

The results of combining available data for the five pipe line companies only are presented in the following table:

Determination of the Investors' Appraisal of the Risks  
of Capital for Natural Gas Pipe Line Companies

	Total Indicated Market Value of Capital	Total Earnings Available for Capital	Investors' Appraisal of Risks of Capital
1937*	\$84,303,145	\$8,115,489	9.63%
1938*	78,363,890	7,460,403	9.52
1939	157,082,439	13,890,981	8.84
1940	151,452,439	14,460,549	9.55
Interim Period Jan.-Aug., 1941	157,205,131	14,926,344	9.49

Note: \* Data for the Panhandle Eastern Pipe Line Company can not be computed for these years since no part of the common stock was outstanding in the hands of the public.

In other words, this analysis indicated that investors appraised the risks of capital invested in natural gas pipe line companies in 1937, 1938, 1939 and 1940, respectively, at 9.63 per cent, 9.52 per cent, 8.84 per cent and 9.55 per cent, or an average for the four years of 9.38 per cent.

On the basis of the data available for the interim period of 1941, January to August, both inclusive, the investors' appraisal of the risks of capital for pipe lines companies was 9.49 per cent.

Supporting data on each of the companies mentioned in this group are presented in Statements E and E-1 at the end of this exhibit.

Included among the five natural gas pipe line companies was the Panhandle Eastern Pipe Line Company. For this [fol. 13347] company alone, the determination of the investors' appraisal of the risks of capital is presented in the following table:

Determination of the Investors' Appraisal of the Risks of Capital  
of the Panhandle Eastern Pipe Line Company

	Total Indicated Market Value of Capital	Total Earnings Available for Capital	Investors' Appraisal of Risks of Capital
1937*	\$ —	\$ —	—%
1938*	—	—	—
1939	66,681,674	5,601,585	8.40
1940	58,156,283	5,761,686	9.91
Interim Period Jan.-Aug., 1941	64,219,240	5,843,430	9.10

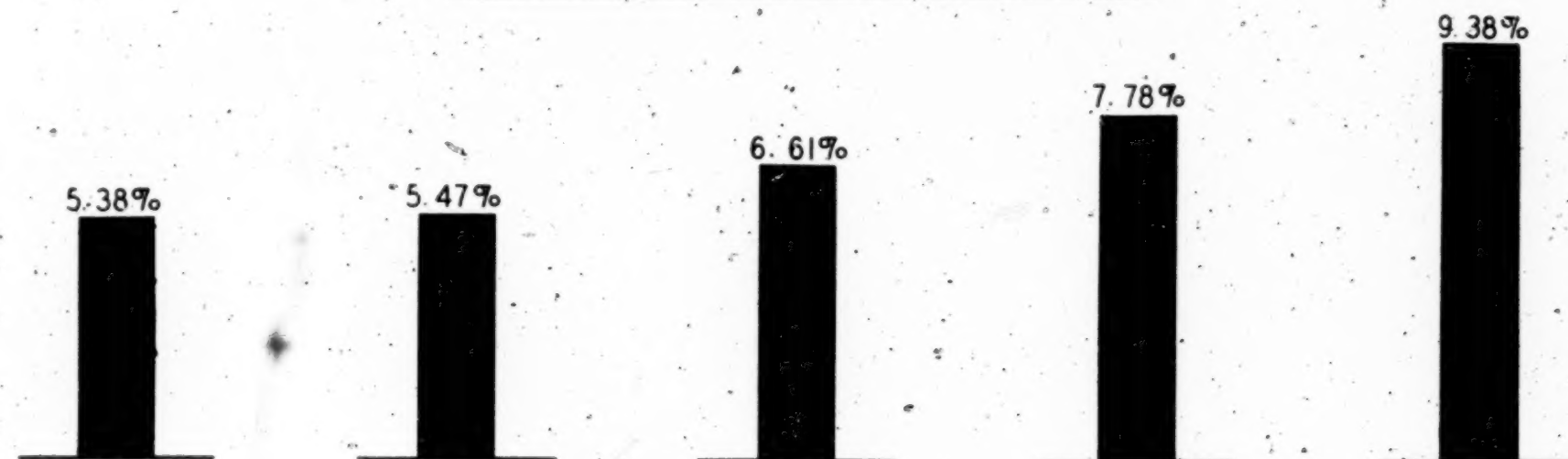
Note: \* Data for the Panhandle Eastern Pipe Line Company can not be computed for these years since no part of the common stock was outstanding in the hands of the public.

In other words, this analysis indicated that investors appraised the risks of capital in the Panhandle Eastern Pipe Line Company in 1939 and 1940, respectively, at 8.40 per cent and 9.91 per cent, or an average for the two years of 9.15 per cent.

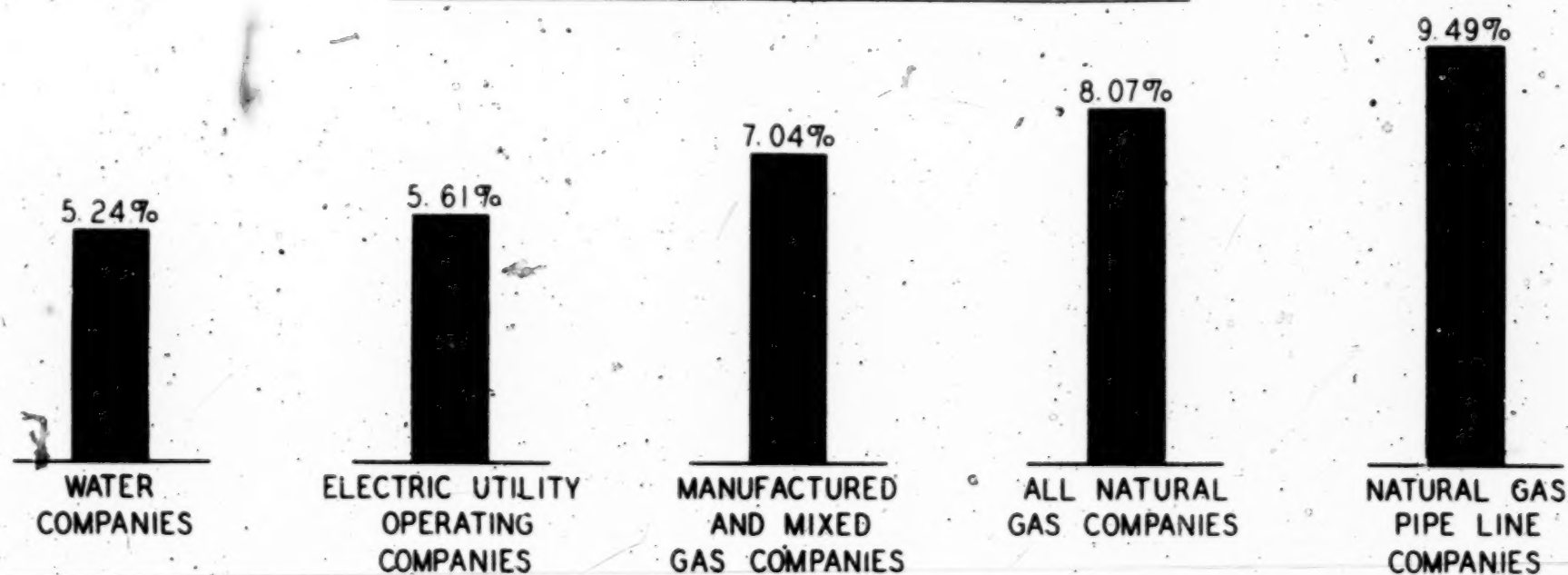
On the basis of the data available for the interim period of 1941, January to August, both inclusive, the investors' appraisal of the risks of capital for this company was 9.10 per cent.

# INVESTORS' APPRAISAL OF CAPITAL RISKS IN VARIOUS DIVISIONS OF THE UTILITY INDUSTRY

FOUR YEAR AVERAGE, 1937 — 1940



INTERIM PERIOD, JANUARY — AUGUST, 1941





## 6. Summary of Analyses:

[fol. 13349] The foregoing analyses indicate most clearly that the percentages representing the investors' appraisal of the risks of capital invested in the various divisions of the utility industry analyzed, increased as the risks of the particular utility division increased. In order that this may be seen clearly, the summary figures are presented in the table below and graphically on the accompanying chart.

Investors' Appraisal of Capital Risks in Various Divisions  
of the Utility Business

	1937	1938	1939	1940	Four Year Average 1937-40	Interim Period Jan.-Aug. 1941
Water Companies	5.53%	5.24%	5.64%	5.13%	5.38%	5.24%
Electric Utility Operating Companies	5.47	5.52	5.42	5.46	5.47	5.61
Manufactured and Mixed Gas Companies	6.12	6.72	6.72	6.89	6.61	7.04
All Natural Gas Companies	7.81	7.68	7.60	8.03	7.78	8.07
Natural Gas Pipe Line Companies	9.63	9.52	8.84	9.55	9.38	9.49
Panhandle Eastern Pipe Line Company	(*)	(*)	8.40	9.91	9.15	9.10

Notes: (\*) Data for the Panhandle Eastern Pipe Line Company cannot be computed for these years since no part of the common stock was outstanding in the hands of the public.

(\*) Average for two years, 1939 and 1940.

The above table conclusively shows that for all full years studied, as well as for the interim period of 1941, January-August, both inclusive, investors appraised the risks of capital invested in natural gas companies at approximately 1 per cent higher than in manufactured and mixed gas companies, and from 2 to 2½ per cent higher than the risk of electric operating utility companies or water companies.

[fol. 13350] Furthermore, it is clearly evident that investors consider the risks of capital invested in natural gas pipe line companies to be greater than the risks encountered in other divisions of the natural gas industry.

Signed at New-York City, October, 1941.

PAUL B. COFFMAN.

# INVESTORS' APPRAISAL OF RISKS OF CAPITAL

FOR THE YEARS 1937, 1938, 1939 AND 1940

## WATER COMPANIES

	<u>Indicated Market Value of Capital</u>				<u>Earnings Available for Distribution</u>		
	<u>1937</u>	<u>1938</u>	<u>1939</u>	<u>1940</u>	<u>1937</u>	<u>1938</u>	<u>1939</u>
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Bridgeport Hydraulic Co.	\$18,079,750	\$19,885,420	\$18,300,930	\$19,980,780	\$ 904,087	\$ 783,375	\$ 831,754
Elizabethtown Water Co. Consolidated	4,222,735	3,889,185	4,217,839	4,513,944	296,650	297,601	328,336
Hackensack Water Co.	25,674,345	25,355,875	26,622,100	26,876,500	1,671,089	1,593,759	1,772,500
Middlesex Water Co.	3,358,995	2,894,868	2,961,420	3,121,725	195,871	170,811	192,010
New Haven Water Co.	18,009,875	16,841,375	16,542,000	17,846,000	801,022	722,305	790,753
Plainfield-Union Water Co.	6,475,700	5,731,710	6,361,240	6,312,068	356,375	348,969	367,952
Stanford Water Co.	3,929,000	3,947,000	4,630,000	4,593,000	185,227	197,240	211,289
TOTALS	\$79,750,400	\$78,545,433	\$79,635,529	\$83,244,017	\$4,410,321	\$4,114,060	\$4,494,594

## Statement A

ings Available for Distribution to Capital				Investors' Appraisal of Risks of Capital			
1937	1938	1939	1940	1937	1938	1939	1940
6)	(7)	(8)	(9)	10=6.2	11=7.3	12=8.4	13=9.5
4,087	\$ 783,375	\$ 831,754	\$ 844,352	5.00%	3.94%	4.54%	4.23%
6,650	297,601	328,336	360,665	7.03	7.65	7.78	7.99
1,089	1,593,759	1,772,500	1,495,754	6.61	6.29	6.66	5.57
5,871	170,811	192,010	180,248	5.83	5.90	6.48	5.77
1,022	722,305	790,753	843,525	4.45	4.29	4.78	4.73
6,375	348,969	367,952	342,982	5.50	6.09	5.78	5.43
5,227	197,240	211,289	205,268	4.71	5.00	4.56	4.47
0,321	\$4,114,060	\$4,494,594	\$4,272,794	5.53%	5.24%	5.64%	5.13%

INVESTORS' APPRAISAL OF RISKS OF CAPITAL

FOR THE INTERIM PERIOD OF 1941, JANUARY-AUGUST, BOTH INCLUSIVE

WATER COMPANIES

<u>Company</u> (1)	<u>Indicated Market Value of Capital</u> (2)	<u>Earnings Available for Distribution to Capital</u>		<u>Investors' Appraisal of Risks of Capital</u> 5-342
		<u>Amount</u> (3)	<u>For the 12 Months Ended</u> (4)	
Bridgeport Hydraulic Co.	\$19,193,280	\$ 844,352	December 31, 1940	4.40%
Elizabethtown Water Co. Corps.	4,415,069	360,605	December 31, 1940	3.17
Haekensack Water Company	26,012,125	1,495,754	December 31, 1940	5.62
Middlesex Water Co.	3,132,150	198,743	December 31, 1940	6.35
New Haven Water Co.	16,910,250	843,525	December 31, 1940	4.99
Plainfield-Union Water Co.	6,824,645	341,006	December 31, 1940	5.00
Stamford Water Co.	4,729,000	205,268	December 31, 1940	4.34
TOTALS	\$81,816,519	\$4,289,313		5.24%



INVESTORS' APPRAISAL OF RISKS OF CAPITAL

FOR THE YEARS 1937, 1938, 1939, and 1940

ELECTRIC UTILITY OPERATING COMPANIES

(1)	Indicated Market Value Of Capital				Earnings Available for Distribut		
	1937	1938	1939	1940	1937	1938	193
	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Bangor Hydro-Electric Co.	\$ 17,658,678	\$ 17,803,960	\$ 18,675,730	\$ 18,716,454	\$ 964,998	\$ 998,977	\$ 976,
Boston Edison Co.	140,377,138	132,313,981	145,728,974	138,188,040	7,505,886	7,163,506	7,297,
Central Hudson Gas & Elec. Co.	45,606,962	41,827,003	44,969,613	47,747,225	2,204,575	2,120,707	2,160,
Cleveland Electric Illuminating Co.	162,573,543	153,145,329	163,229,810	176,026,227	8,601,798	8,325,924	8,832,
Commonwealth Edison Co.	626,918,052	660,399,663	705,083,800	721,097,209	39,294,881	39,006,579	41,254,
Connecticut Power Co.	36,990,387	33,632,638	37,066,931	41,478,516	1,958,145	1,838,446	2,020,
Consolidated Edison Co. of N. Y.	1,081,962,070	1,016,256,197	1,098,864,474	1,075,551,545	52,797,146	53,893,205	54,904,
Consolidated Gas, El. Lt. & Pr. Co. of Balt.	123,915,004	173,690,887	192,500,229	196,607,319	9,162,762	8,316,215	9,240,
Detroit Edison Co.	296,828,857	276,594,513	302,842,593	298,657,066	15,898,965	13,841,099	15,685,
Duke Power Co.	104,759,073	100,702,575	110,652,621	112,649,504	6,030,474	5,667,150	6,989,
Hartford Electric Light Co.	54,136,250	51,344,300	58,203,600	58,972,900	2,777,364	2,576,545	2,866,
Pacific Gas & Electric Co.	638,037,391	634,250,065	672,910,962	671,464,986	37,323,156	35,979,365	38,214,
Pennsylvania Water & Power Co.	59,937,547	54,881,581	58,060,506	52,664,433	3,348,104	3,584,838	3,264,2
Southern California Edison Co., Ltd.	343,135,975	325,193,494	334,074,211	335,163,005	19,146,425	19,019,797	19,480,4
Tampa Electric Co.	20,911,357	19,606,938	20,573,177	18,979,266	1,458,155	1,501,642	1,508,3
TOTALS	\$3,813,738,284	\$3,691,943,124	\$3,963,437,231	\$3,963,963,695	\$208,472,836	\$203,833,995	\$214,695,6



## Statement B

CAPITAL1940INVESTORS'

Earnings Available for Distribution to Capital				Investors' Appraisal of Risks of Capital			
1937	1938	1939	1940	1937	1938	1939	1940
(6)	(7)	(8)	(9)	10=6÷2	11=7÷3	12=8÷4	13=9÷5
964,998	998,977	976,129	1,027,166	5.46%	5.61%	5.23%	5.49%
7,505,886	7,163,506	7,297,587	7,730,837	5.35	5.41	5.01	5.59
2,204,575	2,120,707	2,160,156	2,160,156	4.83	5.07	4.80	4.58
8,601,798	8,325,924	8,832,181	9,833,158	5.29	5.44	5.41	5.59
39,294,881	39,006,579	41,254,094	41,866,784	6.27	5.91	5.85	5.81
1,958,145	1,838,446	2,020,810	2,005,022	5.29	5.47	5.45	4.83
52,797,146	53,893,205	54,904,914	55,095,151	4.88	5.30	5.00	5.12
9,162,762	8,316,215	9,240,571	8,769,162	4.98	4.79	4.80	4.46
15,898,965	13,841,092	15,685,727	16,968,523	5.36	5.00	5.18	5.68
6,030,474	5,667,150	6,989,767	7,367,101	5.76	5.63	6.32	6.64
2,777,364	2,576,545	2,866,385	2,936,499	5.13	5.02	4.92	4.98
37,323,156	35,979,365	38,214,304	37,112,476	5.85	5.67	5.68	5.53
3,348,104	3,584,838	3,264,229	3,038,118	5.59	6.53	5.62	5.77
19,146,425	19,019,797	19,480,429	19,126,879	5.58	5.85	5.83	5.71
1,458,155	1,501,642	1,508,391	1,474,266	6.97	7.54	7.33	7.77
208,472,836	203,833,995	214,695,674	216,540,166	5.47	5.52%	5.42%	5.46%

INVESTORS' APPRAISAL OF RISKS OF CAPITALFOR THE INTERIM PERIOD OF 1941, JANUARY-AUGUST, BOTH INCLUSIVEELECTRIC UTILITY OPERATING COMPANIES

<u>Company</u>	<u>Indicated Market Value of Capital</u>	<u>Earnings Available for Distribution to Capital</u>		<u>Investors' Appraisal of Risks of Capital</u>
		<u>Amount</u>	<u>For the 12 Months Ended</u>	
(1)	(2)	(3)	(4)	
Bangor Hydro-Electric Co.	\$19,497,463	\$1,056,079	Aug. 31, 1941	5.42
Boston Edison Co.	130,188,753	7,703,746	June 30, 1941	5.92
Central Hudson Gas & Elec. Corp.	40,682,150	2,052,925	June 30, 1941	5.05
Cleveland Elec. Illuminating Co.	170,709,695	10,095,807	June 30, 1941	5.91
Commonwealth Edison Co.	690,871,828	42,306,172	June 30, 1941	6.20
Connecticut Power Co.	39,820,951	2,005,022	Dec. 31, 1940	5.04
Consolidated Edison Co. of N. Y.	393,759,658	53,124,160	June 30, 1941	5.35
Consolidated Gas Elec. Lt. & Pwr. Co. of Baltimore	190,877,517	8,736,038	June 30, 1941	4.58
Detroit Edison Co.	289,844,480	18,164,018	July 31, 1941	6.27
Duke Power Co.	115,966,535	7,367,101	Dec. 31, 1940	6.35
Hartford Electric Light Co.	57,155,000	2,936,499	Dec. 31, 1940	5.14
Pacific Gas & Electric Co.	681,892,625	34,959,006	June 30, 1941	5.13
Pennsylvania Water & Power Co.	48,867,425	3,000,155	June 30, 1941	6.14
Southern California Edison Co.	332,214,944	18,723,848	June 30, 1941	5.64
Tampa Electric Co.	14,511,463	1,505,242	July 31, 1941	10.37
TOTALS	<u>\$3,816,860,487</u>	<u>\$214,235,818</u>		<u>5.61%</u>

INVESTORS' APPRAISAL OF RISKS OF CAPITAL

FOR THE YEARS 1937, 1938, 1939 AND 1940

MANUFACTURED AND MIXED GAS COMPANIES

(1)	Indicated Market Value of Capital				Earnings Available for Distribution		
	1937	1938	1939	1940	1937	1938	1939
(2)	(3)	(4)	(5)	(6)	(7)	(8)	
Bridgeport Gas Light Co.	\$ 7,203,845	\$ 6,378,500	\$ 7,371,750	\$ 7,674,000	\$ 431,757	\$ 421,181	\$ 437,728
Brooklyn Union Gas Co.	74,712,428	55,671,027	64,483,081	64,366,613	4,447,231	4,213,480	4,336,218
Elizabethtown Consolidated Gas Co.	8,033,570	7,452,830	7,839,990	8,232,183	590,455	569,472	599,152
Hartford Gas Co.	6,000,000	5,490,000	6,405,000	6,540,000	392,260	366,943	387,306
Laclede Gas Light Co.	27,707,333	23,147,993	22,986,737	22,837,768	2,272,816	1,922,077	1,976,522
Peoples Gas, Light & Coke Co.	108,712,493	96,682,833	100,083,807	95,453,405	6,136,925	5,601,560	6,295,550
Providence Gas Co.	13,607,641	10,850,563	11,671,775	13,095,002	945,111	790,096	880,019
Seattle Gas Co.	4,735,745	3,559,771	3,529,628	4,592,857	196,406	188,556	364,806
Springfield (Mass.) Gas Light Co.	3,051,242	2,622,434	3,319,247	3,855,259	270,530	260,003	302,935
Washington Gas Light Co.	30,514,600	31,145,928	34,667,008	36,072,611	1,714,759	2,007,853	2,049,897
TOTALS	\$284,278,897	\$243,001,879	\$262,358,023	\$262,719,698	\$17,398,250	\$16,341,221	\$17,630,133



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Earnings Available for Distribution to Capital				Investors' Appraisal of Risks of Capital			
1937	1938	1939	1940	1937	1938	1939	1940
(6)	(7)	(8)	(9)	10=6+2	11=7+3	12=8+4	13=9+5
\$ 431,757	\$ 421,181	\$ 437,728	\$ 441,618	5.99%	6.60%	5.94%	5.75%
4,447,231	4,213,480	4,336,218	4,323,953	5.95	7.57	6.72	6.72
590,455	569,472	599,152	548,277	7.35	7.64	7.64	6.66
392,260	366,943	387,306	425,918	6.54	6.68	6.05	6.51
2,272,816	1,922,077	1,976,522	2,330,739	8.20	8.30	8.60	10.21
6,136,925	5,601,560	6,295,550	6,366,277	5.65	5.79	6.29	6.67
945,111	790,096	880,019	893,427	6.95	7.28	7.54	6.82
196,406	188,556	364,806	350,291	4.15	5.30	10.34	7.63
270,530	260,003	302,935	278,618	8.87	9.91	9.13	7.23
1,714,759	2,007,853	2,049,897	2,131,961	5.62	6.45	5.91	5.91
\$17,398,250	\$16,341,221	\$17,630,133	\$18,091,079	6.12%	6.72%	6.72%	6.89%

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INVESTORS' APPRAISAL OF RISKS OF CAPITAL  
FOR THE INTERIM PERIOD OF 1941, JANUARY-AUGUST, BOTH INCLUSIVE  
MANUFACTURED AND MIXED GAS COMPANIES

<u>Company</u>	<u>Indicated Market Value of Capital</u>	<u>Earnings Available for Distribution to Capital</u>  <u>Amount</u>	<u>For the 12 Months Ended</u>	<u>Investor Appraisal of Risk of Capital</u>
(1)	(2)	(3)	(4)	5-3-
Bridgeport Gas & Light Company	\$ 6,443,500	\$ 441,618	Dec. 31, 1940	6.8
Brooklyn Union Gas Company	59,089,732	4,230,242	June 30, 1941	7.1
Elizabethtown Consolidated Gas Co.	7,452,830	548,277	Dec. 31, 1940	7.3
Hartford Gas Company	6,135,000	425,918	Dec. 31, 1940	6.9
Laclede Gas & Light Company	29,788,757	2,598,420	June 30, 1941	8.7
Peoples Gas, Light & Coke Co.	103,469,152	6,968,708	June 30, 1941	6.74
Providence Gas Company	12,225,039	893,427	Dec. 31, 1940	7.31
Seattle Gas Company	4,363,776	352,401	June 30, 1941	8.08
Springfield (Mass.) Gas Light Co.	3,533,651	278,618	Dec. 31, 1940	7.88
Washington Gas & Light Co.	34,627,608	2,079,868	March 31, 1941	6.01
TOTALS	\$267,129,045	\$16,817,497		7.04



# INVESTORS' APPRAISAL OF RISKS OF CAPITAL

FOR THE YEARS 1937, 1938, 1939 AND 1940

## ALL NATURAL GAS COMPANIES

(1)	Indicated Market Value of Capital				Earnings Available for Distribution		
	1937	1938	1939	1940	1937	1938	1939
	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Consolidated Gas Utilities Corp.	\$ 8,642,688	\$ 5,787,821	\$ 6,243,085	\$ 7,921,864	\$ 582,845	\$ 79,685	\$ 691,175
El Paso Natural Gas Co.	23,053,338	25,532,882	33,076,171	33,411,781	2,300,950	2,510,812	2,710,765
Houston Natural Gas Corp.	5,864,837	4,558,112	4,760,835	5,853,679	481,567	413,108	514,512
Interstate Natural Gas Co.	24,062,063	20,250,251	22,632,634	22,756,518	2,383,513	2,032,488	2,014,221
Lone Star Gas Corp.	86,958,624	79,681,534	78,796,337	78,318,290	8,143,140	6,339,854	6,408,886
Memphis Natural Gas Company	6,068,588	5,319,599	5,404,148	6,123,818	785,079	661,021	657,002
Montana-Dakota Utilities Co.	25,295,347	20,508,729	22,624,279	26,137,253	1,692,558	1,618,067	1,577,479
Mountain Fuel Supply Company	16,675,379	10,825,067	9,452,034	11,322,542	654,141	758,027	902,055
National Fuel Gas Company	60,010,382	49,760,990	48,122,611	44,045,715	3,660,300	3,179,213	3,601,477
Oklahoma Natural Gas Co.	37,028,018	38,140,854	43,009,099	44,454,138	2,992,093	2,766,413	2,878,972
Pacific Lighting Corp.	166,189,727	156,881,940	171,099,361	166,945,793	11,999,728	11,544,010	10,755,353
Panhandle Eastern Pipe Line Co.	-	-	66,681,674	58,156,283	-	-	5,601,585
Southern Natural Gas Company	31,119,156	27,261,158	29,287,812	31,080,539	2,645,947	2,256,082	2,907,408
TOTALS (including Panhandle Eastern Pipe Line Co.)	\$490,968,147	\$444,508,937	\$541,190,084	\$535,528,213	\$38,321,861	\$34,158,780	\$41,120,890
TOTALS (excluding Panhandle Eastern Pipe Line Co.)	\$490,968,147	\$444,508,937	\$474,508,410	\$477,371,930	\$38,321,861	\$34,158,780	\$35,519,305

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Earnings Available for Distribution to Capital				Investors' Appraisal of Risks of Capital			
1937	1938	1939	1940	1937	1938	1939	1940
(6)	(7)	(8)	(9)	10=6+2	11=7+3	12=8+4	13=9+5
582,845 \$	73,685 \$	591,175 \$	729,531	6.74%	1.38%	9.47%	9.21%
300,950	2,510,812	2,710,765	2,749,087	9.98	9.83	8.20	8.23
481,567	413,108	514,512	670,450	8.21	9.06	10.81	11.45
383,513	2,032,488	2,014,221	1,972,286	9.91	10.04	8.90	8.67
143,140	6,339,854	6,408,886	7,366,636	9.36	7.96	8.13	9.41
785,079	661,021	657,002	701,853	12.94	12.43	12.16	11.46
692,558	1,618,067	1,577,479	1,653,656	6.69	7.89	6.97	6.33
654,141	758,927	902,055	950,069	3.92	7.00	9.54	8.39
660,300	3,179,213	3,601,477	4,283,237	6.10	6.39	7.48	9.72
992,093	2,766,413	2,878,972	3,490,137	8.08	7.25	6.69	7.85
999,728	11,544,010	10,755,353	9,400,323	7.22	7.36	6.29	5.66
-	-	5,601,585	5,761,686	-	-	8.40	9.91
645,947	2,256,082	2,907,408	3,275,637	8.50	8.28	9.93	10.54
321,861	34,158,780	34,120,890	343,004,588	7.81%	7.68%	7.60%	8.03%
321,861	34,158,780	35,519,305	37,242,902	7.81%	7.68%	7.49%	7.80

# INVESTORS' APPRAISAL OF RISKS OF CAPITAL

FOR THE INTERIM PERIOD OF 1941 JANUARY-AUGUST, BOTH INCLUSIVE

## ALL NATURAL GAS COMPANIES

<u>Company</u>	<u>Indicated Market Value of Capital</u>	<u>Earnings Available for Distribution to Capital</u>		<u>Investors' Appraisal of Risks of Capital</u>
		<u>Amount</u>	<u>For the 12 Months Ended</u>	
(1)	(2)	(3)	(4)	5=3:2
Consolidated Gas Utilities Corp.	\$ 8,729,039	\$ 772,208	July 31, 1941	8.85%
El Paso Natural Gas Co.	32,739,778	2,688,603	June 30, 1941	8.21
Houston Natural Gas Corp.	6,094,468	670,450	Dec. 31, 1940	11.00
Interstate Natural Gas Co.	20,964,966	1,972,286	Dec. 31, 1940	9.41
Lone Star Gas Corp.	76,923,794	7,569,497	June 30, 1941	9.84
Memphis Natural Gas Co.	4,598,368	701,853	Dec. 31, 1940	15.26
Montana-Dakota Utilities Co.	27,615,561	1,604,968	June 30, 1941	5.81
Mountain Fuel Supply Co.	11,063,855	950,069	Dec. 31, 1940	8.59
National Fuel Gas Co.	40,464,143	4,283,237	Dec. 31, 1940	10.59
Oklahoma Natural Gas Co.	50,153,965	3,271,169	July 31, 1941	6.52
Pacific Lighting Corp.	164,048,359	9,726,794	June 30, 1941	5.93
Panhandle Eastern Pipe Line Co.	64,219,240	5,843,430	June 30, 1941	9.10
Southern Natural Gas Co.	34,772,779	3,720,172	June 30, 1941	10.70
TOTALS	<u>\$542,388,315</u>	<u>\$43,774,736</u>		<u>8.07</u>



INVESTORS' APPRAISAL OF RISKS OF CAPITAL

FOR THE YEARS 1937, 1938, 1939 AND 1940

NATURAL GAS PIPE LINE COMPANIES

(1)	<u>Indicated Market Value of Capital</u>				<u>Earnings Available for Distribut</u>		
	<u>1937</u>	<u>1938</u>	<u>1939</u>	<u>1940</u>	<u>1937</u>	<u>1938</u>	<u>1939</u>
	(2)	(3)	(4)	(5)	(6)	(7)	(8)
El Paso Natural Gas Co.	\$23,053,338	\$25,532,882	\$33,076,171	\$33,411,781	\$2,300,950	\$2,510,812	\$2,710,1
Interstate Natural Gas Co.	24,062,063	20,250,251	22,632,634	22,756,518	2,383,513	2,032,489	2,014,
Memphis Natural Gas Co.	6,068,588	5,319,599	5,404,148	6,123,818	785,079	661,021	657,0
Panhandle Eastern Pipe Line Co.	-	-	66,681,674	58,156,283	-	-	5,601,
Southern Natural Gas Co.	31,119,156	27,261,158	29,287,812	31,080,539	2,645,947	2,256,082	2,907,
TOTALS (including Panhandle Eastern Pipe Line Co.)	<u>\$84,303,145</u>	<u>\$78,363,890</u>	<u>\$157,082,439</u>	<u>\$151,452,439</u>	<u>\$8,115,489</u>	<u>\$7,460,403</u>	<u>\$13,890,</u>
TOTALS (excluding Panhandle Eastern Pipe Line Co.)	<u>\$84,303,145</u>	<u>\$78,363,890</u>	<u>\$90,400,765</u>	<u>\$93,372,656</u>	<u>\$8,115,489</u>	<u>\$7,460,403</u>	<u>\$8,289,</u>

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Earnings Available for Distribution to Capital				Investors' Appraisal of Risks of Capital			
1937	1938	1939	1940	1937	1938	1939	1940
(6)	(7)	(8)	(9)	10=6+2	11=7+3	12=8+4	13=9+5
00,950	\$2,510,812	\$2,710,765	\$2,749,087	9.98%	9.83%	8.20%	8.23%
83,513	2,032,480	2,014,221	1,972,286	9.91	10.04	8.90	8.67
85,079	661,021	657,002	701,853	12.94	12.43	12.16	11.46
-	-	5,601,585	5,761,686	-	-	8.40	9.91
45,947	2,256,082	2,907,408	3,275,637	8.50	8.28	9.93	10.54
15,489	\$7,460,403	\$13,839,981	\$14,460,549	9.63%	9.52%	8.84%	9.55%
15,489	\$7,460,403	\$8,289,396	\$8,698,863	9.63%	9.52%	9.17%	9.32%



INVESTORS' APPRAISAL OF RISKS OF CAPITAL  
FOR THE INTERIM PERIOD OF 1941, JANUARY-AUGUST, BOTH INCLUSIVE  
NATURAL GAS PIPE LINE COMPANIES

<u>Company</u>	<u>Indicated Market Value of Capital</u>	<u>Earnings Available for Distribution to Capital</u>  <u>Amount</u>	<u>For the 12 Months Ended</u>	<u>Investors' Appraisal of Risks of Capital</u>
(1)	(2)	(3)	(4)	5=3+2
El Paso Natural Gas Co.	\$32,739,778	\$2,688,603	June 30, 1941	8.21%
Interstate Natural Gas Co.	20,964,966	1,972,286	Dec. 31, 1940	9.41
Memphis Natural Gas Co.	4,596,368	701,853	Dec. 31, 1940	15.26
Panhandle Eastern Pipe Line Co.	64,219,240	5,843,430	June 30, 1941	9.10
Southern Natural Gas Co.	34,772,779	3,720,172	June 30, 1941	10.70
TOTALS (including Panhandle Eastern Pipe Line Co.)	<u>\$157,295,131</u>	<u>\$14,926,344</u>		<u>9.49%</u>
TOTALS (excluding Panhandle Eastern Pipe Line Co.)	<u>\$ 93,075,891</u>	<u>\$ 9,082,914</u>		<u>9.76%</u>

[fol. 13361]

## Statement F.

General Information Covering Each Company As To The Nature And Size Of The Business And The Territory Served.

I. Water Companies

1. Bridgeport Hydraulic Company This independent water company furnishes water for industrial and domestic purposes to Bridgeport, Stratford, Fairfield, Easton, Shelton, Trumbull and Westport, having a population of approximately 200,000. Approximately 36,000 customers are served, through 515.55 miles of mains.

2. Elizabethtown Water Company, Consolidated This independent water company serves the townships of Piscataway, Union, Clark and Hillside and the boroughs of Middlesex and Dunellen, N. J., and also serves in part the city of Plainfield, the townships of Springfield, Raritan and North Plainfield and the boroughs of Roselle and South Plainfield, N. J. The population served totals about 72,000 and the customers served about 17,000. The company has 267.22 miles of mains.

3. Hackensack Water Company This independent water company serves a population of approximately 430,000 in 53 municipalities in eastern Bergen County and northern Hudson County, N. J., including Englewood, Hackensack, Rutherford, Teaneck, Tenafly, North Bergen, Union City and Weehawken. Its wholly owned subsidiary, Spring Valley Water and Supply Co. serves a population of about 20,000 in municipalities in Southern Rockland County, N. Y., including Blauvelt, Grandview, Nanuet, Pearl River, Piermont, Sparkill and Spring Valley. The system contains 1,019 miles of mains. There are also about 104,000 service pipes, about 25 per cent of which are inactive.

4. Middlesex Water Company This independent water company serves an estimated population of 70,414 in the boroughs of South Plainfield, Metuchen, Carteret, and townships of Raritan, Woodbridge and Clark, N. J. Property consists of 175 miles of cast iron pipe line and three

sources of water supply, having a capacity of 11 million gallons per day.

5. New Haven Water Company This company owns and operates a water system supplying without competition the city of New Haven and 11 surrounding towns, including a total population of approximately 265,000. Milford Water Company, a wholly owned subsidiary, supplies water to Milford, Conn. Company and subsidiary have in operation about 545 miles of mains, supplying water to approximately 43,000 individual customers.

6. Plainfield-Union Water Company This independent water company supplies water for domestic and public use in 17 municipalities in New Jersey, including the cities of Plainfield and Linden. The company owns and operates 365.92 miles of mains and has approximately 28,000 customers.

[fol. 13362] 7. Stanford Water Company This company serves water to a population of some 50,000 in the township of Stamford, Conn. In addition, a contract is held with Greenwich Water Company to supply its need, when needed, not to exceed four million gallons of water per day. Properties include 156.5 miles of mains.

## II. Electric Utility Operating Companies

[fol. 13363] 1. Bangor Hydro Electric Company Company supplies electricity without competition from any other public utility in portions of Penobscot, Hancock and Washington Counties in Eastern Maine, serving 73 communities having a total population of about 118,500. In Hancock County there is a substantial seasonal business in summer. Bangor, which is located in this company's territory, however, through its own municipal hydro-electric plant and distribution system which is connected with company's electric system, supplies electricity for municipal demands in Bangor. Approximately 45% of the electric sales revenues are derived from residential and 50% from commercial and industrial customers. Company also operates an electric street railway system in and between Bangor, Brewer, Veazie, Orono and Old Town in Penobscot County.

2. Boston Edison Company Without competition, and with no limit on franchise, this company supplies electric light and power to Boston, Mass. (excluding Charlestown) and to 39 nearby cities and towns. Territory served is densely populated and company's customers are predominantly in domestic and small commercial classifications, about 37 per cent and 29 per cent of total operating revenues being derived from these respective groups. Sales to large commercial business contribute 20 per cent of revenues; street lighting sales to municipal and other electric systems, and distribution in Boston proper of steam, account for the remaining 14 per cent.

3. Central Hudson Gas & Electric Corporation Company serves and extensive territory in Hudson River Valley between New York City and Albany, supplying without competition electricity and gas to Poughkeepsie, Beacon, Kingston, Newburgh and Catskill. Also supplies electricity to 20 incorporated and 460 unincorporated villages and gas to 6 incorporated villages. In addition, it supplies energy to the Liberty, Walden and Harlem Valley districts of New York State Electric & Gas Corporation under a 10-year contract expiring May 2, 1949. Total population served is estimated at more than 267,000. In 1940, 83.5% of gross operating revenues was derived from electric service, 16.24% from gas and 0.26% from steam heating. Territory served is not highly industrialized, and communities served depend upon relatively small diversified industries and fruit and dairy farms. Company's principal industrial customers are manufacturers of building products, textiles, machine and metal products, paper and clothing and food industries. Other large customers are municipal water pumping plants and public and private institutions.

4. Cleveland Electric Illuminating Company (The) Company is engaged in the generation of electric energy and in transmission, distribution and sale thereof for light, heat and power purposes in Cleveland, Ohio, and in adjacent industrial, suburban and rural territory in Ohio extending nearly 100 miles along the south shore of Lake Erie. Company is also engaged in the production, distribution and sale of steam for heating and other purposes.

in the downtown business section of Cleveland. Approximately 95% of company's 1940 operating revenues were derived from the sale of electric energy and approximately [fol. 13364] 5% from the sale of steam. Company generates virtually all of its electric energy requirements. Territory served includes the major portions of Cuyahoga, Lake, Geauga and Ashtabula Counties, and a small part of Lorain County, Ohio. Company estimates that population of total area served is around 1,340,000.

5. Commonwealth Edison Company Company and subsidiaries supply the entire electric light and power requirements of Chicago and furnish electricity, gas and other services in the suburban area adjacent to Chicago and in other portions of Illinois as far west as the Mississippi River. Territory has an estimated population in excess of five million. Electric business is well diversified and accounts for about 90 per cent of revenues, with the remainder coming mostly from gas.

6. Connecticut Power Company (The) This operating utility supplies electricity and gas to New London and Stamford and to smaller communities including Middletown, Darien, Manchester, Waterford, New Hartford, Avon, Farmington, Bolton, Canaan, Norfolk, Thomaston and other communities in Connecticut. Electricity is furnished under long term contract to public service companies operating in Torrington, Bristol, Greenwich and Hartford. Gas is also supplied at wholesale to another company for distribution to Greenwich. Company has 60,260 electric meters and 21,000 gas meters in its territory which embraces a population of approximately 197,776. Company derives approximately 85% of its gross revenues from electric sales.

7. Consolidated Edison Company of New York, Inc. Company, with affiliates, serves approximately eight million people in New York City and vicinity. Operations include practically the entire gas and electric light and power business in Manhattan and Bronx Boroughs, New York City; almost all of Westchester County and a large part of Queens; the entire electric light and power services in Brooklyn; and a substantial steam business in important financial, commercial and residential sections of Manhat-



tan. About three-quarters of the system's total revenues are derived from the sale of electric energy, the remainder from gas, steam and miscellaneous sources. Business of the electric and gas divisions is unusually well diversified; but because of rate differentials, domestic and general retail customers account for the bulk of dollar sales:

8. Consolidated Gas, Electric Light & Power Company of Baltimore Company supplies electricity, gas and steam to Baltimore, and the first two services to surrounding territory wholly within Maryland. The population served is about 1,178,000. Nearly 75 per cent of operating revenues is derived from electric business and all but a small part of the remainder from gas operations. Electric load is well diversified, revenues from the domestic, industrial and commercial groups being approximately equal. Long term contracts are held to supply power to Pennsylvania Railroad Company.

9. Detroit Edison Company Company supplies the entire electric light and power requirements of the Detroit metropolitan area and extensive agricultural sections adjacent thereto, and also provides steam heating service in the business district of Detroit and minor gas, water and steam heating services outside the city limits. Electric [fol 13365] revenues account for about 96 per cent of gross business. Despite preponderance of industrial load, principally with the automobile industry, promotional efforts of the management have made domestic service the largest source of revenues. Population of the area served is approximately two and one-half million.

10. Duke Power Company Company furnishes electric light and power in the manufacturing and industrial sections of North Carolina and South Carolina including Charlotte, Winston-Salem and Greensboro, North Carolina, and Greenville, Spartanburg and Anderson, South Carolina. Power is supplied at wholesale for commercial and municipal uses and to distributing companies in a territory including more than 110 cities and towns. Population served by system is approximately 1,500,000. Company also provides bus service in Charlotte and Greenville, S. C.

11. Hartford Electric Light Company (The) Besides supplying electric light and power to the City of Hartford, this company serves some 16 Connecticut towns within the same area (about 205 square miles) including West Hartford, East Hartford, Wethersfield, Tariffville, Bloomfield, East Grandy, Grandy and Newington. Number of customers is about 76,300. Total population served is about 249,000.

12. Pacific Gas & Electric Company This system supplies electricity, natural and manufactured gas, and miscellaneous services to an extensive territory in northern and central California, including the important San Francisco Bay industrial region, highly developed agricultural areas in the Sacramento and San Joaquin Valleys, and such large communities as San Francisco, Oakland, Sacramento, San Jose and Fresno. Electric operations account for approximately 70 per cent of consolidated gross revenues, with gas producing most of the remainder. Total population served aggregates over 3,200,000.

13. Pennsylvania Water & Power Company This company sells at wholesale electric power, part of which it generates while remainder is purchased. Together with its wholly-owned, transmission subsidiary, Susquehanna Transmission Co. of Maryland, the company represents an important unit in the regional power supply system supplying eastern Pennsylvania and Maryland.

14. Southern California Edison Co. Ltd. This company's service area, with a population of approximately 2,000,000, extends from the San Joaquin Valley in the central section of California to the fertile regions and highly industrialized centers in the southern part. Electric service provides virtually all of revenues, and is well diversified.

15. Tampa Electric Company Company does the entire electric light and power business in the Tampa, Plant [fol. 13366] City, Dade City and Winter Haven areas, Florida, serving a permanent population of about 192,500. It also provides street railway service in Tampa, water service in Winter Haven, operates ice plants in Dade City, Plant City, Auburndale and Winter Haven, and a precool-

ing plant at Winter Haven serving one of the largest packing houses in the State.

### III. Manufactured and Mixed Gas Companies

[fol. 13367]. 1. Bridgeport Gas Light Company Company supplies, under perpetual franchise, manufactured gas to a population of approximately 195,000 in Bridgeport, Stratford, Fairfield, Southport, Greenfield Hill, Long Hill Center, and Greens Farm, Conn. Daily capacity is 11,500,000 cubic feet.

2. Brooklyn Union Gas Company Under perpetual franchises, company supplies manufactured gas to most of Brooklyn and part of Queens, New York City. As territory served, with over 2,800,000 inhabitants, is one of the most densely populated areas in the United States, about 75 per cent of total operating revenue is derived from domestic consumers. Company owns and operates two manufacturing plants containing 16 water gas sets, with aggregate daily capacity of 84,000,000 cubic feet, and 90 coke ovens with aggregate daily capacity of 24,000,000 cubic feet.

3. Elizabethtown Consolidated Gas Company Company serves manufactured gas to a population of approximately 265,000 in 17 towns in northern New Jersey. Customers number approximately 69,000. Daily gas manufacturing capacity is 12,500,000 cubic feet.

4. Hartford Gas Company Company supplies manufactured gas to Hartford and six surrounding towns in Connecticut, serving a population of about 295,000 and approximately 56,000 customers. Plants have a daily capacity of about eight million cubic feet of water and coal gas.

5. Laclede Gas Light Company Company owns and operates the entire gas system serving a mixture of natural gas and manufactured gas to the city of St. Louis. Manufactured gas properties have a daily capacity of over 34,800,000 cubic feet. Additional manufactured gas is purchased from the Illinois & Missouri Pipe Line Company. An added supply of natural gas is available through long term contracts with Mississippi River Fuel Corporation. Distribution system consists of some 1,200 miles of mains.

Approximately 70% of its revenues is derived from domestic sales, with commercial and industrial sales contributing only about 12% and 10% respectively.

6. Peoples Gas Light & Coke Company One of the largest gas utility organizations in the world, this company supplies the entire gas requirements of the city of Chicago, serving a mixture of manufactured and natural gas to an aggregate population of about 3,700,000. Production facilities include five manufacturing plants with total daily capacity of 737,760 therms of coke oven and water gas. Natural gas transported from the Texas Panhandle fields to Chicago by affiliated pipe line companies is purchased under contract. Management has stated that when and if the supply of such fuel is materially curtailed or exhausted, or when company discontinues its purchases, service will be restored to a straight manufactured gas basis.

7. Providence Gas Company Company supplies manufactured gas to Providence and eight surrounding towns in Rhode Island, serving a population of nearly 400,000. It also produces and markets coke and other by-products. Plants have a daily generating capacity of 12,000,000 cubic feet of coal gas and 10,500,000 cubic feet of water gas.

[fol. 13368] 8. Seattle Gas Company Company supplies manufactured gas for light, heat and fuel in Seattle, Renton and Kent, and 21 surrounding communities in the state of Washington, serving a population of approximately 391,000. Generating capacity of water and oil gas plant is 15,900,000 cubic feet per day.

9. Springfield (Mass.) Gas Light Company This company supplies manufactured gas to cities of Springfield and Chicopee and six surrounding communities in Massachusetts, serving as estimated population of 241,000 and about 52,000 customers. Gas is also sold to the City of Holyoke Municipal Plant. Coal and water gas plants have a daily capacity of 16,200,000 cubic feet.

10. Washington Gas Light Company Company and subsidiaries are engaged in the business of manufacturing, purchasing, distributing and selling gas within the metropolitan area of Washington, embracing the District of

Columbia and adjacent territories in Maryland and Virginia. Population of the entire service area is estimated at about 865,000 people, and business is almost entirely domestic. The gas distributed and sold is a mixture of 70 per cent manufactured gas and 30 per cent natural gas, with a heating content of about 600 B.t.u. per cubic foot.

#### IV. Natural Gas Companies

[fol. 13369] 1. Arkansas Louisiana Gas Company. This company, a subsidiary of Arkansas Natural Gas Corporation, was incorporated in Delaware on March 9, 1928 as Southern Cities Distributing Company, and has since by merger or acquisition succeeded to the operation of all the natural gas properties in Arkansas, Louisiana and Texas formerly owned by Arkansas Natural Gas Corporation and subsidiaries. Bulk of company's revenue comes from direct distribution of natural gas to domestic, commercial, industrial, and other customers in 102 communities in Arkansas, Louisiana and Texas. The population supplied is about 300,000. Company's principal properties form a complete natural gas system, including production, transmission and distribution facilities. As of December 31, 1940, company owned 142 natural gas wells. Acreage held is classified as 22,000 producing and 97,300 undeveloped. Transportation and distribution facilities consist of 3,425 miles of pipe line and 9 compressor stations.

2. Atlantic Seaboard Corporation. This company, a subsidiary of Columbia Gas & Electric Corporation, owns and operates, with a subsidiary, a gas transmission pipe line from Kentucky to West Virginia, Virginia and Maryland. Natural gas is purchased and transported to those three states for sale at wholesale to subsidiaries, affiliates and outsiders for retail distribution.

3. Cabot, Inc. Godfrey L. was incorporated in Massachusetts September 14, 1922. The company supplies natural gas at wholesale to other gas utility companies (principally Hope Natural Gas Company and Cabot Gas Corporation, a subsidiary), and at retail to some 4,838 customers in West Virginia, Pennsylvania and New York. Company also manufactures and sells carbon black in various states and foreign countries. At December 31,



1939, the company had 416 producing gas wells and 12 compressor or booster stations with a total rated capacity of 4,134 h. p. Company's leased and owned lands in West Virginia, New York and Pennsylvania cover 281,676 acres, of which 32,180 acres are operated and 249,496 acres are unoperated. Leased lands total 209,728 acres and owned lands, 71.

4. Canadian River Gas Company This company is an affiliate of Southwestern Development Company, and was incorporated under the laws of Delaware, February 24, 1928, for the purpose of producing and transporting natural gas, and although a separate legal entity, operates substantially as a business and physical unit with Colorado Interstate Gas Company in accordance with certain operating agreements. The company supplies all the natural gas required by Colorado Interstate Gas Company for distribution through its pipe line system extending as far north as Denver and 25% of the requirements of Natural Gas Pipeline Company of America (delivered near Gray, Okla.) for resale mainly in Chicago, Illinois. At December 31, 1940, company held leases on 315,000 acres, of which 309,500 acres were operated, and owned 97 gas wells of a total of about 1,490 sweet and sour wells in the entire Texas Panhandle (Amarillo) gas field.

[Tel. 13370] 5. Carnegie Natural Gas Company, a subsidiary of United States Steel Corp., produces and purchases natural gas, the major portion of which is sold to affiliates for industrial purposes. Some natural gas is supplied at wholesale to other gas utility companies and at retail to about 3,000 customers in Pennsylvania and West Virginia. Company's leased (181,149 acres) and owned (3,099 acres) properties are classified as operated, 88,487; unoperated, 95,761. At December 31, 1939 company had 1,083 producing wells, 16 compressor or booster stations with a rated capacity of 10,650 h. p., 675 miles of gathering mains, and 584 miles of transmission mains.

6. Chicago District Pipeline Company, a subsidiary of Peoples Gas, Light & Coke Co., was incorporated in Illinois September 10, 1930 as Will Cook Construction Co. Company now purchases natural gas from Natural Gas

Pipe Line Co. of America and transports and resells such gas at wholesale to parent and other gas utilities serving territories adjacent to Chicago. Company owns a metering station at Joliet, Ill., and about 80 miles of pipeline from Joliet to the Chicago area.

7. Cincinnati Gas Transportation Company, a subsidiary of Columbia Gas & Electric Corp. (99.4%), was incorporated in West Virginia June 2, 1908, for the purpose of building and operating pipe lines connecting natural gas fields in West Virginia and Kentucky with the city of Cincinnati. The company owns and operates a high pressure gas transmission line about 195 miles in length.

8. Cities Service Gas Company, controlled by Empire Gas & Fuel Co., was incorporated under Delaware laws January 18, 1922, as Empire Natural Gas Co.; name was changed to Cities Service Gas Co. July 6, 1927. The company operates a gas pipe line system comprising 4,332 miles of line and 15 mainline compressor stations. Gas is sold to local companies serving 285 cities and communities in western Missouri, eastern Kansas and northern Oklahoma, or a total population of about 1,510,000.

9. Colorado Interstate Gas Company, controlled by Southwestern Development Co. and Standard Oil Co. of New Jersey, was incorporated June 8, 1927 in Delaware. Company transports and sells natural gas to industrial and domestic markets in Colorado, and supplies 25% of the gas required by Natural Gas Pipe Line Co. of America. By reason of long term contracts, company operates as a physical and business unit with Canadian River Gas Co., an affiliate of Southwestern Development Co. Company owns a transmission system consisting of about 420 miles of natural gas pipe lines, three compressor stations of 8,000 h. p. capacity, measuring stations and general property.

[fol. 13371] 10. Consolidated Gas Utilities Corporation, was incorporated in Delaware June 28, 1935 as successor in reorganization to Consolidated Gas Utilities Co. The company is engaged in production, transportation and wholesale and retail distribution of natural gas in western and northern Oklahoma and south central and southeastern Kansas, serving a population of 400,000 in over 50

communities. The company owns and operates 34 gas distribution systems of approximately 1,460 miles of transmission pipe lines, 12 compressor stations having a combined horsepower of about 10,070, and approximately 8,506 acres of undeveloped and 10,132 acres of developed oil and gas leases with 160 gas wells thereon. Company also has contracts to purchase gas from 200 wells.

11. East Ohio Gas Company, entirely owned by Standard Oil Co. (N. J.) was incorporated under laws of Ohio February 24, 1910. The company supplies the entire natural gas business in Cleveland, Ohio, and in over 59 other cities and towns in eastern and northern Ohio, serving a total population of approximately two millions. The daily manufacturing capacity is 3,500,000 cu. ft. The company has 6,722 miles of pipe line with 3 compressor stations of a total horsepower of 2,805. Early in 1941 a new manufacturing and storage plant was completed for handling gas in a liquid state to provide for the requirements in the peak season; the capacity of the new storage plant is 250,000 cu. ft. of liquid gas which is equivalent to about 150,000,000 cu. ft. of natural gas in its gaseous state.

12. El Paso Natural Gas Company, a subsidiary of Standard Oil Co. of N. J., was incorporated in Delaware November 28, 1928. Company and subsidiaries purchase natural gas from producers in the Lea County field in Southeastern New Mexico, transmit it through a 1,520 mile pipe line system with a daily capacity of 105,000,000 cu. ft. and sell it at wholesale to public utility and industrial customers in Texas, New Mexico, Arizona and Mexico. A wholly owned subsidiary is engaged in the production of gas and oil incident thereto. Properties include the pipe line, six compressor stations equipped with thirty 800 h. p. units, and two gasoline absorption plants.

13. Hope Natural Gas Company, wholly owned by Standard Oil Co. (N. J.) was incorporated in West Virginia September 17, 1898. The company supplies natural gas to other utility gas companies and to various communities in West Virginia, with a total of 42,444 customers. The company operates leased acreage of 373,361 acres and owned acreage of 7,717 acres. Unoperated acreage consists

of leased lands of 577,615 acres and owned lands of 5,647 acres. At December 31, 1938, the company had 3,502 producing wells and 46 compressor or booster stations with a total rated capacity of 93,530 h. p.

[fel.13372] 14. Houston Natural Gas Corporation was incorporated in Texas May 29, 1940, to acquire properties previously owned by Houston Natural Gas Corp. (Delaware) and its four subsidiaries. The company is engaged in the business of purchasing, distributing and marketing natural gas at retail in Houston and sixty-nine other towns in the Texas Gulf Coast area. Gas is purchased under contract from Houston Pipe Line Co., Houston Oil Co. of Texas, and several other producers. The company owned 1,251.98 miles of transmission and distribution lines as of June 30, 1940.

15. Interstate Natural Gas Company, Inc., a subsidiary of Standard Oil Company of N. J. was incorporated in Delaware on April 1, 1926. Company supplies, under contract, fuel requirements of Baton Rouge refinery of Standard Oil Co. of Louisiana, and markets excess at wholesale to utilities, industrial companies and municipalities along the route of its pipe line. Property consists mainly of 54,000 acres of leases and gas rights in the Monroe field of Louisiana, 170 miles of pipe line from the field to Baton Rouge, compressor stations with a daily capacity of 100,000,000 cu. ft. of gas, field lines, natural gas reserves and wells.

16. Kentucky West Virginia Gas Company, incorporated in West Virginia November 23, 1926 as Pittsburgh & West Virginia Pipe Line Co., owns and operates natural gas properties and pipe lines in Kentucky and West Virginia. Practically entire output is furnished to the gas systems of the companies (Louisville Gas & Electric Co. and Philadelphia Co.) which control it.

17. Lone Star Gas Corporation, incorporated in Delaware on January 23, 1926, is exclusively a holding company, owning stocks and obligations of seven operating subsidiaries comprising the Lone Star System which is principally engaged in the production, purchase (the system purchases over 75% of its gas requirements), trans-

mission and distribution of natural gas in Texas, Oklahoma, and Iowa. The system sells natural at retail in more than 300 communities with a combined population of 1,600,000. Properties at December 31, 1938 included about 163,000 acres owned or leased of which about 58,000, containing approximately 400 wells, were developed; approximately 4,500 miles of pipe line; 2,250,000 cu. ft. of gas storage holders, standby gas manufacturing plants, oil absorption plants, and compressor stations with a capacity of 34,400 h. p.

18. Manufacturers Light and Heat Company, a Pennsylvania corporation controlled by Columbia Gas & Electric Corp., distributes natural gas at retail in western Pennsylvania, eastern Ohio and northern West Virginia to an area of estimated population of 1,117,900. Its gas transmission facilities are connected with the transmission systems of, and it sells natural gas to, and purchases natural gas from, various affiliated companies and independent producers. It also produces natural gas.

[fol. 13373] 19. Memphis Natural Gas Company, affiliated with Commonwealth Gas Corp., was incorporated in Delaware June 11, 1928. The company purchases and sells natural gas at wholesale only under long-term contracts. To a very small extent, the company is also engaged in the production of crude oil. Properties include approximately 40½ miles of pipe line with a daily rated transportation capacity of at least 105,000,000 cu. ft., 4 compressor stations with an installed capacity of 16,425 h. p., and other equipment. The company has a one-half interest in 330 acres of an oil field in Texas, the acreage having 33 oil-producing wells with a daily proration allowable for each of 20 barrels.

20. Michigan Gas Transmission Corp., a Delaware Corporation controlled by Columbia Gas & Electric Corp., owns and operates gas transmission facilities in Michigan, Ohio and Indiana. These facilities deliver natural gas from the system of Panhandle Eastern Pipe Line Co. to the system of Michigan Consolidated Gas Co., a non-affiliate for distribution in Detroit and Ann Arbor. Its facilities also connect with the facilities of, and it sells to, various affli-



ates in Indiana and Ohio. It purchases its major requirements of natural gas from Panhandle Eastern Pipe Line Co. Gas is also sold to several other companies for resale.

21. Mississippi River Fuel Corporation is controlled by a syndicate including Standard Oil Co., (N. J.), United Gas Corp., Columbian Carbon Co. and United Carbon Co. through common stock holdings. It was incorporated in Delaware, February 8, 1928. The company buys and sells natural gas on long-term contracts. Properties consist of 450 miles of main pipe line with a daily capacity of 100,000,000 cu. ft. from Louisiana to St. Louis, together with compressing stations and branch pipe lines for deliveries of natural gas to industrial consumers and for wholesale connections to communities along the route.

22. Montana-Dakota Utilities Company was incorporated in Delaware, March 14, 1924, under the name of Minnesota Northern Power Co., functioning as a holding company until June 17, 1935, at which time the present name was adopted. At December 31, 1940 the company supplied natural gas for residential, commercial and industrial purposes to 23,757 customers in 56 communities located in western North and South Dakota and north central Montana. The company generates all the electricity used in its electric utility business and sells some to a non-affiliated utility in eastern Montana, and also produces and distributes steam heat in Miles City and Glendive, Montana. Company operates 35 retail gas and electric appliance stores. At December 31, 1940, the company owned and controlled a total of 292 wells, 1,235 miles of gas transmission and field mains, 9 compressor stations and 489 miles of distribution lines. Company also owns 5 principal electric generating plants, 945.1 pole miles of transmission lines and 96 substations; also owns 1.4 miles of low pressure [fol. 13374] steam mains. Of 1940 gross revenue, 71% was derived from natural gas and the remainder from electric and miscellaneous services.

23. Mountain Fuel Supply Company was incorporated in Utah May 7, 1935, to merge Western Public Service Co. and its subsidiaries. The company is engaged in produc-

tion of natural gas in Colorado, Wyoming and Utah and the transmission to and distribution of such gas in Salt Lake City and surrounding territory to 29,770 active customers as of the end of 1940. Gas supply is obtained from 44 wells in seven fields. Company's undrilled leaseholds total 56,711 acres and its pipe line extending from gas fields to territory served have a daily capacity of 72 million cu. ft. The company had about 1,463 miles of gathering, transmission and distributing lines at the end of 1940.

24. National Fuel Gas Company, incorporated December 8, 1902 in New Jersey as successor to Natural Gas Trust Co., supplies, through fifteen subsidiaries, natural (30%) and mixed (70%) gas to a population of about 1,325,000 in western New York, western Pennsylvania, eastern Ohio and Ontario, Canada. Industrial users accounted for approximately 14% of total sales in 1940; and some 42% of gas requirements were purchased from non-subsidiaries. Subsidiaries owned on December 31, 1940, 4,244 wells, located on 431,196 acres operated. Unoperated acreage amounted to 792,144 acres. Pipe lines in the system aggregated about 8,058 miles.

25. Natural Gas Company of West Virginia, a subsidiary of Columbia Gas & Electric Corporation, distributes natural gas at retail to an estimated population of 224,700 in West Virginia, Pennsylvania and Ohio. Company produces and purchases from independent producers, natural gas. Company's gas transmission facilities connect with the transmission system of, and it purchases natural gas from and sells natural gas to, the Manufacturers Light and Heat Co. and Ohio Fuel Gas Co., affiliates.

26. Natural Gas Pipeline Company of America, incorporated in Delaware April 25, 1930 as Continental Construction Corp., was controlled at December 31, 1940 by five corporations, holdings of three of which (Cities Service Co., Peoples Gas, Light & Coke Co., and Texas Corp.) totaled 68.72%. Company purchases natural gas (75% from Texoma Natural Gas Co., 25% from Colorado Interstate Gas Co. in 1940) which it conveys to Joliet, Ill., and sells indirectly to other utilities for distribution in the Chicago area. Small quantities of gas are sold at different

points along the main pipe line. Property includes 823 miles of pipe line which has a daily capacity of 210,000,000 cu. ft., nine compressor stations containing a total of forty-eight 1,250 h. p. compressors, and a gas treating plant.

[fol. 13375] 27. New York State Natural Gas Corporation is a subsidiary of Lycóming United Gas Corp., in turn a subsidiary of Standard Oil Co. (N. J.). This company in 1939 operated 24,370 acres of property and had 124,395 acres unoperated, with a total of 35 wells. The annual gas production was 8,386,850,000 cu. ft. The company had 266.07 miles of pipe line with 2 compressor stations of a total of 960 h. p. In addition to its own production, the company also purchases gas from independent producers. Sales are at wholesale only.

28. Northern Natural Gas Company was incorporated under the laws of Delaware, April 25, 1930. The company's common stock is held as follows: Lone Star Gas Corp., 30%; North American Light & Power Co., 35%; United Light & Railways Co., 35%. North American Light & Power holdings are to be offered for sale to the public under registration statement filed April 21, 1941. The company is engaged in the purchase, production, gathering, transmission and distribution of natural gas. Natural gas is sold principally at wholesale, in Iowa, Nebraska, South Dakota and Minnesota. The company and subsidiaries own approximately 2,800 miles of transmission lines. The company's natural gas production properties consist of 52 wells owned on 202,700 acres held under leases. In 1940 the company purchased approximately 90% of its gas requirements from non-affiliated interests in Texas and Kansas.

29. North Penn Gas Company, a subsidiary of Pennsylvania Gas & Electric Corp., was incorporated in Pennsylvania on April 8, 1927. Company distributes natural gas directly and through subsidiaries to 58 communities in Pennsylvania and New York with an estimated population of 110,000. At December 31, 1940 the company and subsidiaries owned or leased 225,472 acres and 1,816 wells and a gas manufacturing plant (not used since 1930) with a

daily capacity of 8,000,000 cu. ft. Most wells are in shallow sands.

30. Ohio Fuel Gas Company, a subsidiary of Columbia Gas & Electric Corp., distributes natural gas and a small amount of manufactured gas at retail to a population of about 1,231,000 in central and western Ohio. Company produces and buys natural gas. Company owns a standby gas manufacturing plant with a capacity of 5,000,000 cu. ft. daily, two gas reforming plants with a capacity of 27,000,000 cu. ft. a day, 38 compressor stations with an aggregate capacity of 64,353 h. p., gas holders with an aggregate capacity of 9,570,000 cu. ft. and two under-ground gas storage reservoirs.

31. Oklahoma Natural Gas Company was incorporated in Delaware November 10, 1933 and as of November 30, 1933, under a plan of reorganization, acquired all the assets of Oklahoma Natural Gas Corp. The company's business is [fol. 13376] diversified, furnishing gas for residential, commercial and industrial purposes, and for use in oil well drilling; it also sells gas wholesale at the city gate to 21 distributing companies. The population of the territory served in Oklahoma is approximately 580,000. Property consists of 4,038 miles of distribution and transmission pipe line, 20 compressor stations having a total installed horsepower of 12,350; together with 162,258 acres of land under lease or owned in fee for use in gas production. The company draws gas from 707 wells. Approximately 93% of the gas distributed in 1940 was purchased under contract from other producers.

32. Pacific Lighting Corporation, a parent and an operating company, was incorporated under the laws of California, May 21, 1907, as successor to Pacific Lighting Co. organized in 1886. Through its subsidiaries natural gas is supplied without competition to 249 cities, towns and communities in 11 counties of Southern California, including the City of Los Angeles, an area of over 38,500 square miles, having a population estimated at 3,426,600. The territory supplied is all contiguous and is interconnected by gas pipe lines. Gas is purchased under long-term contracts from oil companies and other independent producers

located in 50 oil and gas fields in California. On December 31, 1940, the gas properties of the system comprised a total of 13,547.99 miles of gas mains and 18 field compressor stations having a total capacity of 50,719 h. p. Other facilities include 3 gas manufacturing plants for emergency service with a daily capacity of 105,032,600 cu. ft.; one Butane conversion plant having a daily capacity of 4,500,000 cu. ft.; 21 distribution booster stations with a capacity of 49,397 h. p.; 35 low pressure and 90 high pressure gas storage holders with a total capacity of 124,320,000 cu. ft.; and 9 Butane gas plants and distribution systems (serving 9 communities) having a total daily capacity of 370,425 cu ft.

33. Panhandle Eastern Pipe Line Company, controlled by Columbia Oil & Gasoline Corp. and Missouri-Kansas Pipe Line Co., was incorporated in Delaware, December 23, 1929 as the Interstate Pipe Line Company. Company, directly and through subsidiaries, does a large wholesale business in natural gas, purchasing about half and producing about half of its requirements, of which about 93% is sold to distribution companies, and 7%, to industrial concerns. Principal customer, (40%) supplies gas to Detroit and Ann Arbor, Michigan. Company owns or controls gas rights on 49,417 acres of operated and 179,549 acres of unoperated land and a 50% working interest in 22,679 and 6,017 of operated and unoperated land respectively, in the panhandle of Texas, southwestern Kansas and Texas County, Oklahoma and, as of December 31, 1940, owned 135 wells (in 46 of which company had only a 50% interest). Total connected open flow of wells owned or controlled by company at that date was 4,423,000 M.C.F. Property in- [fol. 13377] cludes 2,374 miles of pipe lines; 12 compressor stations with gas driven units aggregating 80,100 h. p. capacity; meter stations, a dehydrating plant and a natural gasoline extraction plant.

34. Peoples Natural Gas Company (Pa.), a subsidiary of Standard Oil Co. of New Jersey, was incorporated June 26, 1885 in Pennsylvania. Company produces, purchases, transports and distributes natural gas in southwestern Pennsylvania, and supplies natural gas to the Pittsburgh area. Company holds leases for and owns oil and gas properties and maintains pipe lines.



35. Pittsburgh and West Virginia Gas Company, Inc. incorporated in West Virginia March 12, 1894, as the Fairmont and Grafton Gas Co., is a subsidiary of the Philadelphia Company Standard Gas & Electric System. Company is engaged in producing and selling natural gas, directly and through subsidiaries.

36. Southern Natural Gas Company, This company, controlled by Federal Water Service Corp., was incorporated October 30, 1935, in Delaware pursuant to the reorganization of Southern Natural Gas Corp. Company operates a natural gas pipe line system comprising about 1,340 miles together with eleven compressor stations extending from Louisiana through Mississippi and Alabama to Atlanta, Ga. Gas is purchased under contracts with non-affiliated gas producing companies; however, new contracts have been entered into which permit the company to utilize large recently-developed natural gas reserves of its own. Gas is sold at wholesale to eight distributing companies and two municipalities for distribution to domestic customers and for general and industrial customers. About 83.5% of 1940 gross revenues was derived from sales to distributing companies.

37. South Penn Natural Gas Company, a subsidiary of South Penn Oil Co., was incorporated in West Virginia on November 2, 1922. Company supplies natural gas at wholesale to other utilities and at retail to approximately 4,753 customers in West Virginia. Company's leased and owned lands in West Virginia cover 512,682 acres as follows: 285,161 operated (leased 276,400; owned 8,761); 227,521 unoperated (leased 221,153; owned 6,368).

38. Texoma Natural Gas Company, was incorporated in Delaware, May 26, 1930, and is controlled by Cities Service Co. and Southwestern Development Co., 28.56% each; Texas Corp., 18.86%; Columbian Carbon Co., 2.71%; Peoples Gas Light and Coke Co., 21.3%. The company has acquired leaseholds and wells and has constructed gathering lines in Amarillo (Texas) fields to carry natural gas to a purification refinery in Fritch, Texas. The company has also constructed a 24-inch main pipe line of approximately 76 miles to Gray, Okla., where gas is delivered to Natural Gas Pipe Line Co. of America under an agreement

dated October 15, 1931, by which 75% of the gas delivered is priced at cost of producing by Texoma. The company [fol. 13378] also has some revenue from industrial sales of gas, gasoline sales, and leased facilities.

39. United Fuel Gas Company, a subsidiary of Columbia Gas & Electric Corp., was incorporated in West Virginia. The company is engaged in producing and distributing natural gas at retail in western West Virginia and eastern Ohio to a total population of about 251,800. Its transmission facilities are connected with the systems of, and it sells natural gas to, and purchases natural gas from, various affiliated companies and independent producers. The company is a major source of supply for associated distributing companies in Ohio, Pennsylvania and Kentucky. It owns 18 compressor stations with an aggregate capacity of 68,490 h. p.

40. United Gas Pipe Line Company, controlled by United Gas Corp., was incorporated in Delaware September 3, 1937. On September 25, 1937, it acquired all the gathering lines, main pipe lines, compressor stations and natural gasoline plants of United Gas Public Service Co. and its subsidiaries, except those of Houston Gulf Gas Co., of which it acquired control. The company operates a gas pipe line business, acquiring its gas through purchase contracts, 60% of which was purchased from Union Producing Co. As of December 31, 1940 the system served directly 532 industrial customers.

41. Virginia Gas Transmission Corporation, controlled by Columbia Gas & Electric Corp., owns and operates transmission facilities in Virginia, which form a connecting link between the Maryland and West Virginia sections of the Seaboard line. Company purchases natural gas from and sells natural gas to affiliates.

42. Warfield Natural Gas Company, controlled by Columbia Gas & Electric Corp., distributes natural gas at retail in Ashland, Kentucky and contiguous territory with an estimated population of about 52,300. Company produces and purchases from independent producers, natural gas which it sells to associated companies with whom its

transmission system connects. Company owns two compressor stations with an aggregate capacity of 9,995 h. p.

43. West Texas Gas Company, a subsidiary of Southwestern Development Co., was incorporated April 14, 1927 in Delaware. Company purchases natural gas from an affiliate, and distributes it to about 28,000 customers in 42 towns in western Texas. Company owns 1,370 miles of pipe lines and has four compressor stations.

[fol. 13379]

Exhibit 64.

Investors' Appraisal of the Risks of Capital in the Natural Gas Industry as Compared With Other Divisions of the Utility Industry.

Volume II.

Statistics Supporting Data in Volume I.

Appendixes A, B and C

Prepared by

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[fol. 13380]

Appendix A.

Complete List of Companies Studied

and

Reasons for Eliminating Those Not Used to Determine Investors' Appraisal of Risks of Capital.

**List Of Water Companies From Which Selections Were Made To  
Determine Investors' Appraisal Of Risks Of Capital**

All Operating Companies engaged solely in the Water Business— as prepared from Standard Corporation Records	Companies eliminated because stock is controlled by a Holding Company	Companies eliminated because stock is held by a relatively few individuals	Companies eliminated because 1940 gross operating revenue was less than \$500,000	Companies used to determine investors' appraisal of risks of capital
1. Albama Water Service Co.	X			
2. Alton Water Co.	X			
3. The Ansonia Water Co.			X	
4. Ashtabula Water Works Co.	X			
5. Atlantic County Water Co. of N. J.	X			
6. Biddeford & Saco Water Co.			X	
7. Birmingham Water Works Co.	X			
8. Bridgeport Hydraulic Co.				X
9. Butler Water Co.	X			
10. California Water Service Co.	X			
11. Camden & Rockland Water Co.			X	
12. Citizens Water Co. of Scottsdale, Pa.	X			
13. Citizens Water Co. of Washington, Pa.	X			
14. The City of New Castle Water Co.	X			
15. City Water Co. of Chattanooga	X			
16. Consumers Water Co.		X		
17. Davenport Water Co. (Iowa)	X			
18. Elizabethtown Water Co. Cons. (a)				X
19. Fontana Union Water Co.		X		
20. Greenwich Water Co.	X			
21. Guilford-Chester Water Co.			X	
22. Gulf Coast Water Co.	X			
23. Hackensack Water Co.				X
24. Huntington Water Corp.	X			
25. Illinois Water Service Co.		X		
26. Indianapolis Water Co.	X			
27. Jamaica Water Supply Co.		X		
28. Joplin Water Works Co.	X			
29. Kokomo Water Works Co.	X			
30. Lexington Water Co. (Ky.)	X			
31. Long Island Water Corp.	X			
32. Middlesex Water Co.				X
33. Milford Water Co.	X			
34. Monmouth Consolidated Water Co.	X			
35. Monongahela Valley Water Co.	X			
36. The Morgantown Water Co.	X			
37. Muncie Water Works Co.	X			
38. New Haven Water Co.				X
39. New Jersey Water Co.	X			
40. New Rochelle Water Co.	X			
41. New York Water Service Corp.	X			
42. Norristown Water Co.		X		
43. Ohio Cities Water Corp.	X			
44. Ohio Water Service Co.	X			
45. Pennsylvania & Jersey Water Co.	X			

**List Of Water Companies From Which Selections Were Made To  
Determine Investors' Appraisal Of Risks Of Capital**

All Operating Companies engaged solely in the Water Business -- as prepared from Standard Corporation Records	Companies eliminated because stock is controlled by a Holding Company	Companies eliminated because stock is held by a relatively few individuals	Companies eliminated because 1940 gross operating revenue was less than \$500,000	Companies used to determine investors' appraisal of risks of capital
46. Pennsylvania Water Co.	X			
47. Peoria Water Works Co.	X			
48. Philadelphia Suburban Water Co.		X		
49. Pinellas Water Co.	X			
50. Pittsburgh Suburban Water Service Co.	X			
51. Plainfield Union Water Co.				X
52. The Roaring Creek Water Co.		X		
53. Rochester & Lake Ontario Water Service Corp.	X			
54. St. Joseph Water Co.	X			
55. St. Louis County Water Co.	X			
56. San Diego Water Supply Co.	X			
57. San Jose Water Works	X			
58. Scranton-Spring Brook Water Service Co.	X			
59. Sedalia Water Co.	X			
60. South Bay Consolidated Water Co., Inc.	X			
61. South Pittsburgh Water Co.	X			
62. Southern California Water Co.	X			
63. Springfield City Water Co.	X			
64. Stamford Water Co.				X
65. Temescal Water Co.	X			
66. Texarkana Water Corp.	X			
67. Union Water Service Co.	X			
68. West Virginia Water Service Co.	X			
69. Western New York Water Co.	X			
70. Westmoreland Water Co.	X			
71. Wichita Water Co.	X			
72. Williamsport Water Co.	X			

Note: (a) This company is not carried regularly in Standard Corporation Records, but has been included in this compilation since it is possible to compute the Investors' Appraisal of Risks of Capital.

Source: Standard Corporation Records.



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List Of Electric Utility Operating Companies (And Others) From Which  
Selections Were Made To Determine Investors' Appraisal Of Risks Of Capital

Telephone, Electric and Gas Utility Common Stock considered in the Course of Study of certain factors influencing Investors' Appraisals of Risk Characteristics	Companies eliminated because revenue is derived primarily from telephone service	(a) Companies eliminated because revenue is derived primarily from gas service	Companies eliminated because less than 5% of Common Stock is outstanding in hands of public	Companies eliminated because they are primarily holding companies	Companies used to determine Investors' Appraisal of Risks of Capital
1. American Gas & Electric Co.				X	
2. American Telephone & Telegraph Co.	X				
3. American Water Works & Electric Co.				X	
4. Bangor Hydro-Electric Co., The					X
5. Boston Edison Co. (formerly Edison Elec. Ill. Co. of Boston)					X
6. Bridgeport Gas Light Co.		X			
7. Brooklyn Edison Co., Inc., The			X		
8. Brooklyn Union Gas Co.		X			
9. Central Hudson Gas & Electric Corp.					X
10. Cincinnati & Suburban Bell Telephone Co.	X				
11. Cleveland Electric Illuminating Co., The					X
12. Columbia Gas & Electric Corp.				X	
13. Commonwealth Edison Co. (Ill.)					X
14. Connecticut Power Co. (The)					X
15. Consolidated Edison Co. of New York, Inc.					X
16. Consolidated Gas, Elec. Lt. & Power Co. of Balt.					X
17. Detroit Edison Co., The					X
18. Duke Power Co.					X
19. Hartford Electric Light Co., The					X
20. Laclede Gas Light Co.		X			
21. Long Island Lighting Co.			X		
22. Mountain States Telephone & Telegraph Co.	X				
23. New England Telephone & Telegraph Co.	X				
24. New York and Queens Electric Lt. & Pr. Co.			X		
25. Niagara Hudson Power Corp.				X	
26. North American Co.				X	
27. Pacific Gas & Electric Co.					X
28. Pacific Telephone & Telegraph Co.	X				
29. Peninsular Telephone Co.	X				
30. Pennsylvania Water & Power Co.					X
31. Peoples Gas, Light and Coke Co., The		X			
32. Philadelphia Electric Co.			X		
33. Providence Gas Co.		X			
34. Public Service Co. of Northern Illinois			X		
35. Public Service Corp. of New Jersey				X	
36. Southern California Edison Co., Ltd.					X
37. Southern New England Telephone Co.	X				
38. Tampa Electric Co.					X
39. United Gas Improvement Co., The				X	
40. Washington Gas Light Co.		X			

Note: (a) Attention is directed to the fact that all gas companies used in the Federal Communication Commission's study cited below, as well as three other gas companies, have been used to determine the Investors' appraisal of the Risks of Capital for Manufactured and Mixed Gas Companies. (see Appendix A, pages 4 and 5.)

Source: The list of forty companies appears as Schedule 9 and was used in the presentation of findings in a Federal Communications Commission publication dated June 15, 1938, entitled "The Problem of the 'Rate of Return' in Public Utility Regulations."

**List Of Manufactured And Mixed Gas Companies From Which Selections  
Were Made To Determine Investors' Appraisal Of Risks Of Capital**

All Operating Companies distributing Manufactured and/or Mixed Gas — as prepared from Standard Corporation Records	Companies eliminated because stock was controlled by a Holding Company	Companies eliminated because revenue was not predominantly obtained from gas distribution	Companies eliminated because 1940-Gross Revenue was less than \$1,000,000	Companies used to determine Investors' Appraisal of Risks of Capital
1. Atlantic City Gas Co.	X			
2. Beverly Gas & Electric Co.		X		
3. Binghamton Gas Works	X			
4. Birmingham Gas Co.	X			
5. Bridgeport Gas Light Co.				X
6. Brockton Gas Light Co.			X	
7. Brooklyn Borough Gas Co.	X			
8. Brooklyn Union Gas Co.				X
9. Central Hudson Gas & Electric Corp.		X		
10. Central Indiana Gas Co.	X			
11. Central Pennsylvania Gas Co.			X	
12. Cincinnati Gas & Electric Co.	X			
13. Concord Gas Co.	X			
14. Connecticut Light & Power Co.	X			
15. Connecticut Power Co.		X		
16. Consolidated Gas, Electric Light & Power Co. of Balt.		X		
17. Consumers Gas Co. (Reading, Pa.)	X			
18. County Gas Co. (New Jersey)	X			
19. Cumberland County Power & Light Co.	X			
20. Delaware Power & Light Co.	X			
21. Eastern Shore Public Service Co.		X		
22. Elizabethtown Consolidated Gas Co.				X
23. Fall River Gas Works Co.			X	
24. Fitchburg Gas & Electric Light Co.		X		
25. Florida Power & Light Co.	X			
26. Georgia Power Co.		X		
27. Green Mountain Power Corp.		X		
28. Greenwich Gas Co.			X	
29. Gulf States Utilities Co.		X		
30. Harrisburg Gas Co.	X			
31. Hartford Gas Co.				X
32. Indiana Gas Utilities Co.	X			
33. Iowa Power & Light Co.	X			
34. Jacksonville Gas Co. (Fla.)	X			
35. Kentucky Utilities Co.		X		
36. Kings County Lighting Co.	X			
37. Koppers Co.		X		
38. Laclede Gas Light Co.				X
39. Lake Shore Gas Co.	X			
40. Lawrence Gas & Electric Co.		X		
41. Lowell Gas Light Co.	X			
42. Luzerne County Gas & Electric Corp.		X		
43. Lynn Gas & Electric Co.		X		
44. Manchester Gas Co.			X	
45. Metropolitan Edison Co.		X		
46. Michigan Gas & Electric Co.		X		
47. Milwaukee Gas Light Co.	X			

List Of Manufactured And Mixed Gas Companies From Which Selections  
Were Made To Determine Investors' Appraisal Of Risks Of Capital

All Operating Companies distributing Manufactured and/or Mixed Gas — as prepared from Standard Corporation Records	Companies eliminated because stock was controlled by a Holding Company	Companies eliminated because revenue was not predominantly obtained from gas distribution	Companies eliminated because 1940 Gross Revenue was less than \$1,000,000	Companies used to determine Investors' Appraisal of Risks of Capital
48. Minneapolis Gas Light Co.	X			
49. Missouri Public Service Corp.		X		
50. New Bedford Gas & Edison Light Co.	X			
51. New Britain Gas Light Co.			X	
52. New Haven Gas Light Co.	X			
53. New Jersey Power & Light Co.		X		
54. New York Power & Light Corp.	X			
55. New York State Electric & Gas Corp.	X			
56. New York & Richmond Gas Co.	X			
57. Northern Liberties Gas Co.	X			
58. Northern States Power Co.		X		
59. Peoples Gas, Light & Coke Co.				X
60. Peoples Water & Gas Co.	X			
61. Pittsfield Coal Gas Co.			X	
62. Portland Gas & Coke Co.	X			
63. Portland (Me.) Gas Light Co.			X	
64. Providence Gas Co.				X
65. Puget Sound Power & Light Co.	X			
66. Queensboro Gas & Electric Co.	X			
67. Roanoke Gas & Light Co.	X			
68. St. Louis County Gas Co.	X			
69. Savannah Gas Co.	X			
70. Seattle Gas Co.				
71. Sierra Pacific Power Co.		X		
72. Sioux City Gas & Electric Co.		X		
73. South Carolina Electric & Gas Co.		X		
74. Springfield Gas Light Co.				X
75. Tampa Gas Co.			X	
76. Taunton Gas Light Co.			X	
77. Tide Water Power Co.		X		
78. Toledo Edison Co.		X		
79. Twin States Gas & Electric Co.		X		
80. Virginia Electric & Power Co.		X		
81. Washington Gas & Electric Co.	X			
82. Washington Gas Light Co.				X
83. Western United Gas & Electric Co.				
84. Wisconsin Gas & Electric Co.		X		
85. Wisconsin-Michigan Power Co.		X		

Source: Standard Corporation Records.



List Of Natural Gas Companies From Which Selections Were Made  
To Determine Investors' Appraisal Of Risks Of Capital

Natural Gas Companies selected by Mr. Knapp as representative of the industry in an Exhibit presented for the Federal Power Commission in the Hope-Natural Gas Company Case	Companies eliminated because Common Stocks were not outstanding in the hands of the public	Companies used to determine Investors' Appraisal of Risks of Capital
1. Arkansas Louisiana Gas Co.	X	
2. Atlantic Seaboard Corp.	X	
3. Cabot, Inc., Godfrey L.	X	
4. Canadian River Gas Co.	X	
5. Carnegie Natural Gas Co.	X	
6. Chicago District Pipeline Co.	X	
7. Cincinnati Gas Transportation Co.	X	
8. Cities Service Gas Co.	X	
9. Colorado Interstate Gas Co.	X	
10. Consolidated Gas Utilities Corp.		X
11. East Ohio Gas Co.	X	
12. El Paso Natural Gas Co.		X
13. Hope Natural Gas Corp.	X	
14. Houston Natural Gas Corp.		X
15. Interstate Natural Gas Co., Inc.		X
16. Kentucky West Virginia Gas Co.	X	
17. Lone Star Gas Corp.		X
18. Manufacturers' Light and Heat Co.	X	
19. Memphis Natural Gas Co.		X
20. Michigan Transmission Corp.	X	
21. Mississippi River Fuel Corp.	X	
22. Montana-Dakota Utilities Co.		X
23. Mountain Fuel Supply Co.		X
24. National Fuel Gas Co.		X
25. Natural Gas Company of West Virginia	X	
26. Natural Gas Pipeline Company of America	X	
27. New York State Natural Gas Corporation	X	
28. Northern Natural Gas Co.	X	
29. North Penn. Gas Co.	X	
30. Ohio Fuel Co.	X	
31. Oklahoma Natural Gas Co.		X
32. Pacific Lighting Corp.		X
33. Panhandle Eastern Pipe Line Co.		X
34. Peoples Natural Gas Co.	X	
35. Pittsburgh and West Virginia Gas Co.	X	
36. Southern Natural Gas Co.		X
37. South Penn. Natural Gas Co.	X	
38. Texoma Natural Gas Co.	X	
39. United Fuel Gas Co.	X	
40. United Gas Pipe Line Co.	X	
41. Virginia Gas Transmission Corp.	X	
42. Warfield Natural Gas Co.	X	
43. West Texas Gas Co.	X	

Source: Prepared by Standard & Poor's Corporation using the basic list of companies selected by Mr. Charles W. Knapp, Jr. in presenting a study on "Rate of Return" for the Federal Power Commission in the Hope Natural Gas Company case.

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Appendix B:

Securities of Forty-Three Natural Gas Companies Con-  
sidered Representative of the Industry.

Summary of Amounts Outstanding Segregated According  
to Classes of Holders.



Securities Of Natural Gas Companies  
Summary According To Classes Of Holders

<u>Company and Issues</u>	<u>Total Securities Outstanding</u>	<u>Public</u>	<u>Held by Institutions</u>	<u>Affiliates</u>
<u>Arkansas Louisiana Gas Co. (Dec. 31, 1940)</u>				
Bonds and Debentures:				
First Mtge. "A" 2 3/4%, 1941-44	\$ 2,700,000	\$ —	\$ 2,700,000	\$ —
First Mtge. "B" 3 1/2%, 1945-54	9,700,000	—	9,700,000	—
Debentures, 4 1/4%, 1955	6,500,000	—	—	6,500,000
	18,900,000	—	12,400,000	6,500,000
Common Stock, 298,988 shs., Par \$50	14,949,400	—	—	14,949,400
Total	\$33,849,400	\$ —	\$12,400,000	\$21,449,400
<u>*Atlantic Seaboard Corp. (Dec. 31, 1939)</u>				
Advances	\$13,527,000	\$ —	\$ —	\$13,527,000
Common Stock, 50,000 shs., Par \$10	500,000	—	—	500,000
Total	\$14,027,000	\$ —	\$ —	\$14,027,000
<u>*Cabot, Inc., Godfrey L. (Dec. 31, 1939)</u>				
Notes, 3% 1940	\$ 800,000	\$ —	\$ 800,000	\$ —
Common Stocks, 1,600 shs.	3,285,075	—	(a) 451,697	2,833,378
Total	\$ 4,085,075	\$ —	\$ 1,251,697	\$ 2,833,378
(a) Institutional Holdings: Harvard College — 100 shares; Mass. Institute of Technology — 100 shares; Norwich University — 20 shares.				
<u>*Canadian River Gas Co. (Dec. 31, 1939)</u>				
Bonds and Notes:				
First Mtge. and Coll. S.P. 6% 1948	\$ 5,057,000	\$ —	\$ —	\$ 5,057,000
Notes, 6%, 1940-1948	1,348,254	—	—	1,348,254
	6,405,254	—	—	6,405,254
Common Stock, 25,000 shs., No Par	1	—	—	1
Total	\$ 6,405,255	\$ —	\$ —	\$ 6,405,255
<u>*Carnegie Natural Gas Co. (Dec. 31, 1939)</u>				
Common Stock, 6,000 shs. Par \$50	\$ 300,000	\$ —	\$ —	\$ 300,000
<u>*Chicago District Pipe Line Co. (Dec. 31, 1940)</u>				
Notes, 5%, 1941-1951	\$ 2,036,000	\$ —	\$ —	\$ 2,036,000
Common Stock, 6,500 shs., No Par	650,000	—	—	650,000
Total	\$ 2,686,000	\$ —	\$ —	\$ 2,686,000

\* Data taken from an Exhibit prepared by Mr. Charles W. Knapp, Jr., for the Federal Power Commission in the Hope Natural Gas Co. hearings.

Securities Of Natural Gas Companies  
Summary According To Class Of Holders

<u>Company and Issues</u>	<u>Total Securities Outstanding</u>	<u>Public</u>	<u>Held by Institutions</u>	<u>Affiliates</u>
<u>*Cincinnati Gas Transportation Co. (Dec. 31, 1939)</u>				
Preferred Stock, 5%, 30,000 shs., Par \$100	\$ 3,000,000	\$ —	\$ —	\$ 3,000,000
Common Stock, 20,000 shs., Par \$100	2,000,000*	—	—	2,000,000 (b)
Common Stock, "B", 18,500 shs., Par \$100	1,850,000	—	—	1,850,000 (b)
Total	\$ 6,850,000	\$ —	\$ —	\$ 6,850,000
(b) Includes \$23,500 Par Values of Common and \$1,100 Par Value of Common "B", held by public.				
<u>Cities Service Gas Co. (Dec. 31, 1940)</u>				
<u>Bonds, Debentures and Notes:</u>				
First Mtge. 3 3/4%, 1947-54	\$20,000,000	\$ —	\$20,000,000	\$ —
Debentures 5 1/2%, 1956	8,000,000	—	—	8,000,000
Notes 3 1/4%, 1942-1946	11,000,000 (c)	—	11,000,000	—
	39,000,000	—	31,000,000	8,000,000
Common Stock, 300,000 shs., No Par	30,000,000	—	—	30,000,000
Total	\$69,000,000	\$ —	\$31,000,000	\$38,000,000
(c) Notes Payable are secured by First Mortgage 3 1/4% Bonds maturing serially to 1946.				
<u>Colorado Interstate Gas Co. (Mar. 1, 1941)</u>				
First & Coll. Trust S.P. 2 3/4%, 1948	\$ 7,614,000	\$ —	\$ 7,614,000	\$ —
Preferred Stock, 6%, 20,000 shs., Par \$100	2,000,000	—	—	2,000,000
Common Stock, 1,250,000 shs., No Par	2,352,941	—	—	2,352,941
Total	\$11,966,941	\$ —	\$ 7,614,000	\$ 4,352,941
<u>Consolidated Gas Utilities Corp. (July 31, 1941)</u>				
First Mtge. S.F. 4% "A", 1956	\$ 6,500,000	\$ —	\$ 6,500,000	\$ —
Debenture 5% 1951	900,000	—	\$ 900,000	—
Common Stock, 886,027 shs., Par \$1	886,027	886,027	—	—
Total	\$ 8,286,027	\$ 886,027	\$ 7,400,000	\$ —
<u>East Ohio Gas Company (Dec. 31, 1940)</u>				
Preferred Stock, 7%, 100,000 shs., Par \$100	\$10,000,000	\$ —	\$ —	\$10,000,000
Common Stock, 285,000 shs., Par \$100	28,500,000	—	—	28,500,000
Total	\$38,500,000	\$ —	\$ —	\$38,500,000

\* Data taken from an Exhibit prepared by Mr. Charles W. Knapp, Jr., for the Federal Power Commission in the Hope Natural Gas Co. hearings.